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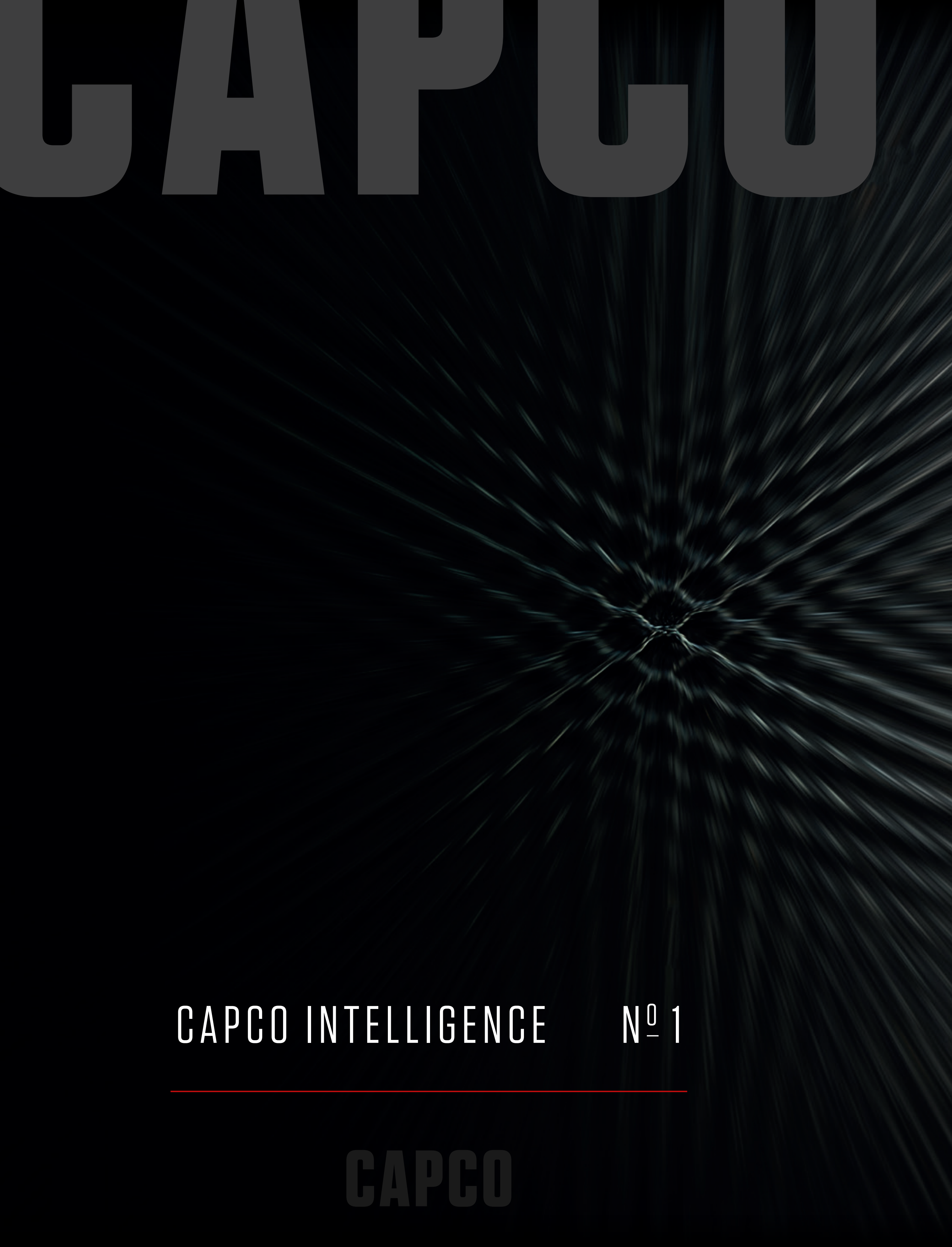

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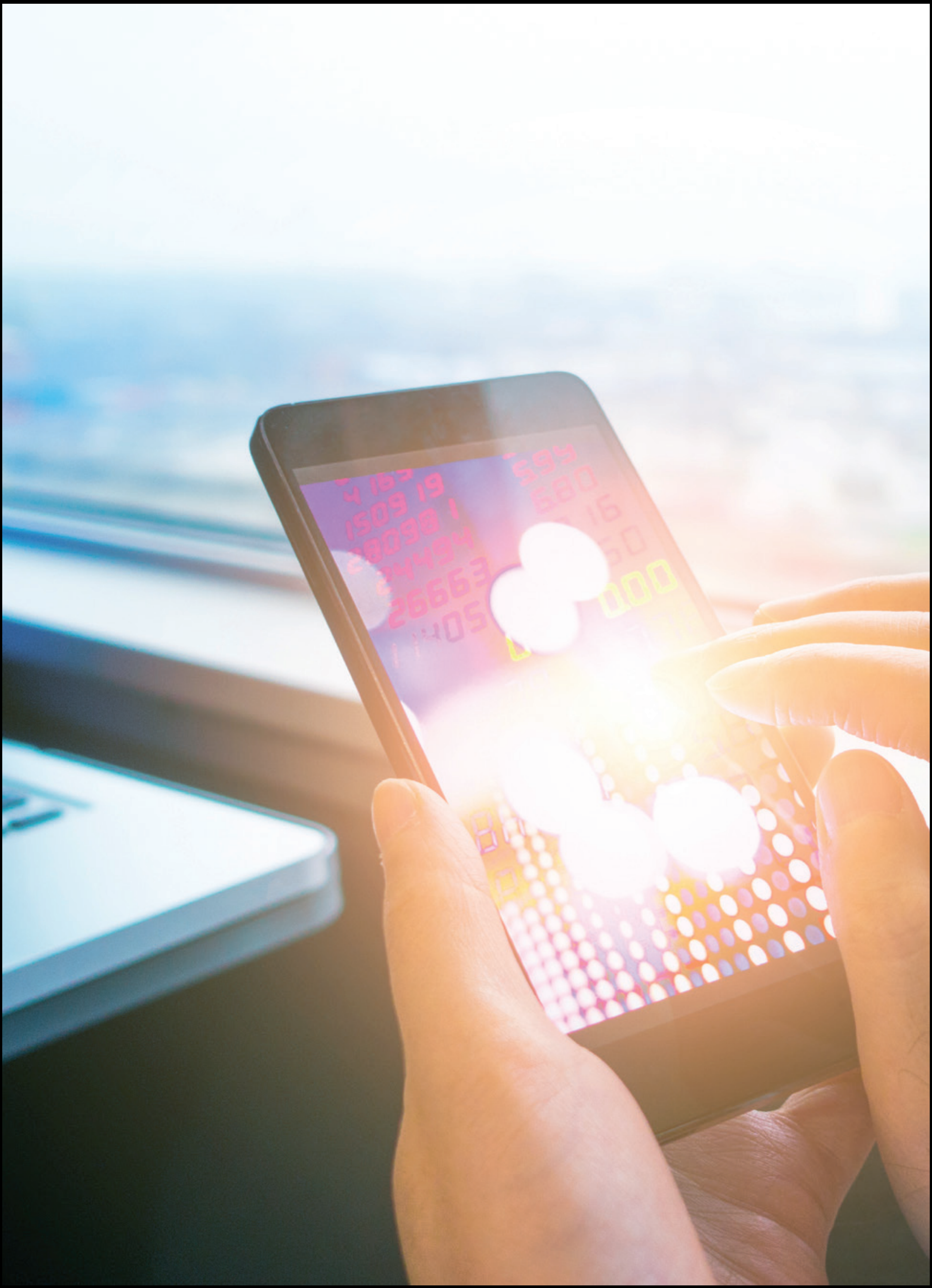

DIGITAL DELIVERED: LAUNCHING DIRECT BANKS

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April 2018

HOW WE MODERNIZE BANKING

In this paper, Capco shares its experiences from the front lines of the digital banking revolution. We are not passive, academic observers. We are at the leading edge of this transformation, accelerating our clients' ability to build direct banks based around new business models, employing innovative technologies. We collaborate with clients to quickly launch digital banking products and services – while at the same time bringing in new customers and billions in new deposits, lowering the cost of service, and shaping 21st century ways of being an agile, resilient, customer-centric bank.

Capco is leading the charge toward the modernization of banking with a portfolio of global customers. Our goal is to help clients achieve their vision of a digital bank whose ease and clarity of customer experience move towards meeting customer expectations set by next-generation brands like Amazon or Spotify.

If you are a business and technology decision-maker at a traditional retail bank, Capco will show you how to make 'synergy' more than a cliché: we know how to support success in entering the direct banking market – while at the same time eliminating creaky old legacy systems and creating the template for a modern banking infrastructure. Finally, we will point to some leading products that are easier to create once we've built together a cleaner, more functional digital banking environment.

NEW AND POTENTIAL DIGITAL BANKING COMPETITION

PAYMENTS	ACCOUNT AGGREGATION	MOBILE BANKS	NEW ENTRANTS?
Alipay	Intuit	Fidor Bank	Amazon
Square	Yodlee	Moven	Google
Paypal		Simple	Facebook

> *"The risk of doing nothing far exceeds that of responding positively to this new disruptive challenge, and that risk is growing every day. Here's why you should be concerned – and begin to act now."*

WHY DIRECT BANKING?

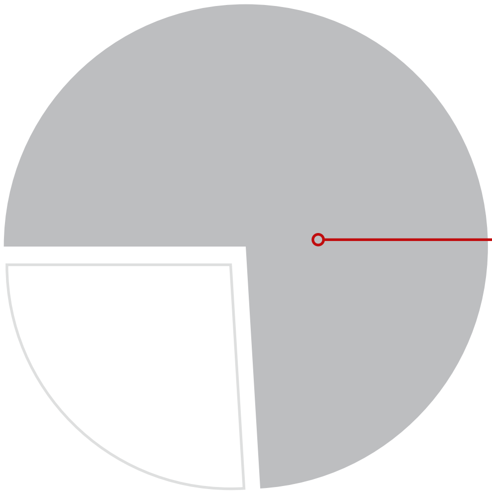
There are a variety of reasons why traditional banks want to, and should, consider entering the direct banking market. First, a huge demographic of desirable customers is attracted to fully digital products and services. Second, technology innovations create opportunities to lower costs and improve customer satisfaction. Third, digital banks allow traditional banks to penetrate new markets with relatively little overhead and no physical presence (although some banks are successfully adopting a hybrid model with low-cost kiosks in strategic locations). Capco has a market-evaluation model that helps clients identify the potential in their target regions for a new direct bank.

Let's go right to the demographic bottom line because the numbers are compelling. With an average age of 47, direct bank customers are six years younger than traditional bank customers.[1] These direct bank customers are more likely to recommend their bank to others – indeed, roughly 75 percent would recommend their direct bank compared to only 55 percent of traditional bank customers.[2]

Millennials are an obvious target for direct banks: 82 percent own a smartphone and 61 percent engage in mobile banking, compared with 60 percent and 30 percent respectively for their parents. Given the choice between a new financial offering from their own bank and one of the tech giants, 73 percent of millennials would choose Google, Apple or another tech leader.[3] For executives of traditional banks, that last preference should be a wake-up call of the challenge that already exists in the battle for new customers.

Between 25 and 30 years of age, bank customers form relationships with products and brands that are typically long lasting and hard to sever.[4] This age group is beginning to advance professionally and starting to amass wealth. If major banks want to form lifetime relationships with a new generation of customers, they will be required to match the customer experience and offerings of disruptive direct banks.

*“**73** percent of millennials would be more excited about a new financial offering from Google/ Amazon/ Apple/ Square/ PayPal than their own bank.”*

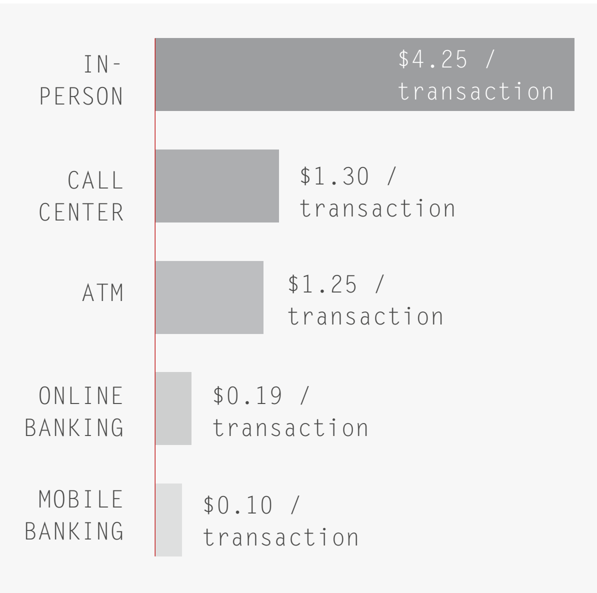


[1] JD Power, 2017, Early Adopters Enjoy Branchless Banking
[2] American Banker, 2017, Consumers Love Direct Banks
[3] Viacom Media, 2013, The Millennial Disruption Index,
[4] TNS, 2013, Direct Banks and the Future of Consumer Banking

Direct banks are adding customers at an 8 percent annual compounded growth rate, and between 2015 and 2020, nearly 50 million new customers will begin using a direct bank.[5] By contrast, the number of customers using physical branches has declined by 9 percent in just the last three years, and that decline is expected to continue.[6]

Direct banks are growing rapidly because they save customers money and are more convenient to use. While trust, security, and legal issues still worry some customers, these barriers are falling. Direct banks are capturing a large proportion of new customers, and the top direct banks continue their growth trajectory at a notable pace. Ally Bank, one of the top four direct banks, grew total deposits by more than $20 billion (more than 35 percent) from 2014 to 2016. By comparison, the top five U.S. traditional banks have grown deposits on average by only 6.6 percent.[7]

DIRECT BANKS HAVE INHERENT COST ADVANTAGES



The cost advantages of digital banking are, if anything, more impressive than the growth story. The cost per transaction with a teller at a branch bank is $4.25, and even call center or ATM interaction costs more than a dollar per transaction. But online and mobile banking transactions cost only 19 and 10 cents each[8] respectively.

[5] Frost & Sullivan, 2016, Global Rating of Direct Banks
[6] Celent, 2014
[7] FDIC, 2017, Statistics on Depository Institutions
[8] The Financial Brand, 2017, The Rise of the Digital-Only Banking Customer

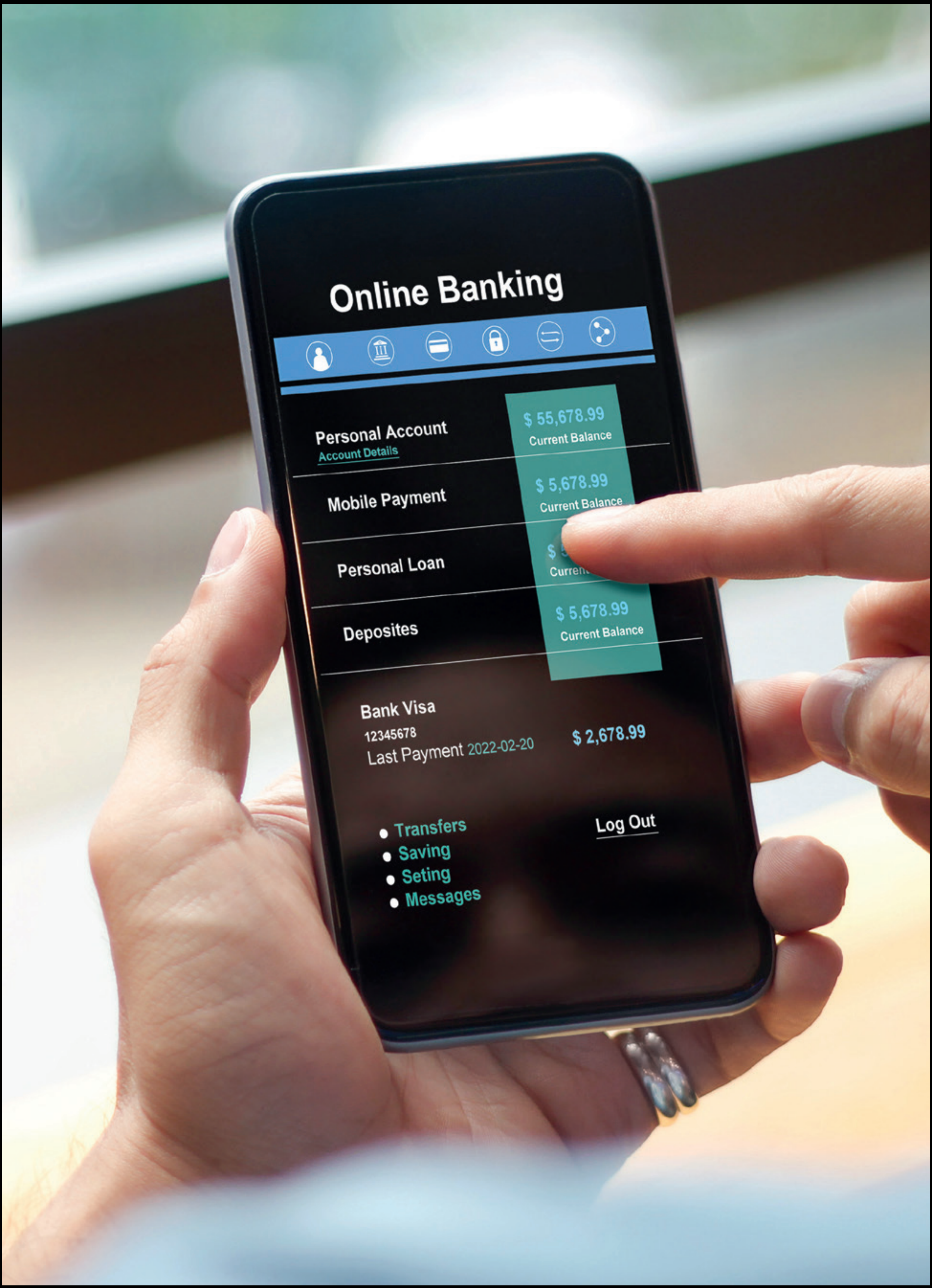
WHY DIRECT BANKING? CONTINUED

With higher interest rates for customers and low operating costs for direct banks, the migration to direct banking shows no signs of slowing. Several large financial institutions, including Goldman Sachs, MUFG and Discover recently launched new direct banks. As they grow, direct banks such as CapitalOne360 and Ally are expanding their range of services (see figure).

Even with all the digital storm clouds brewing, Capco believes that traditional banks that have a large physical footprint are not going away anytime soon, if ever. On the contrary, traditional banks can leverage their reputation and vast resources to gain competitive advantage by introducing offerings that compete with direct banks. Launching a new direct bank can circumvent fragile core systems and pave the way to lower costs, more customers, and easier adoption of new products.

MAJOR DIRECT BANK PLAYERS AND OFFERINGS

ALLY	CAPITAL ONE	NATIONWIDE	DISCOVER BANK	EXTRADE	GS BANK
✓ Checking	✓ Checking	✓ Checking	✓ Checking	✓ Checking	✓ Savings
✓ Savings	✓ Savings	✓ Savings	✓ Savings	✓ IRAs	✓ CDs
✓ Money Market	✓ Money Market	✓ Money Market	✓ Money Market	✓ Brokerage	
✓ IRAs	✓ IRAs	✓ IRAs	✓ IRAs	✓ Managed	
✓ 401k	✓ 401k	✓ CDs			
✓ Brokerage	✓ Brokerage	✓ Home Loans			
✓ CDs	✓ CDs				
✓ Home Loans	✓ Home Loans				
✓ Auto Loans					


Online Banking
Personal Account
Account Details
$ 55,678.99
Current Balance
Mobile Payment
$ 5,678.99
Current Balance
Personal Loan
Deposites
$ 5,678.99
Current Balance
Bank Visa
12345678
Last Payment 2022-02-20
$ 2,678.99
Transfers
Saving
Seting
Messages
Log Out

DELIVERING DIGITAL

Capco has accumulated an impressive international portfolio of direct banking success stories. We can provide clients with a rich perspective on the banking industry's challenges, informed by what we are seeing and doing with other financial institutions - both inside and outside the United States.

Capco initiates strategic analysis at the beginning of any engagement and deploys a skilled execution team to design a market leading experience, products and enhance the speed to market. Our agile approach means that clients can choose from a suite of services ranging from program support to program leadership to full delivery in launching a market-ready product. Here are a few examples from the front lines:

COMBINE A HYBRID DIRECT BANK INITIATIVE WITH A DEPOSIT GROWTH STRATEGY

The bank wanted to pursue an aggressive, two-pronged deposit growth strategy combining the launch of a nationwide, uniquely branded direct bank with a physical expansion into specific new markets. Capco supported all elements of the transformation program, including operations, risk/compliance, and product marketing in addition to leading the design of the new banking platform. We leveraged our banking industry expertise to implement state-of-the-art processes and a superior customer experience.

ALIGN A NEW DIRECT BANK WITH A NEW DEPOSIT PLATFORM

The client, a New York-based subsidiary of a European investment bank, wanted a new direct bank to provide a unique digital experience for high-net-worth customers and entrepreneurs. Capco provided clear objectives, evaluated the vendor's technology against our Target Operating Model to identify potential gaps, and initiated a business and technology delivery structure to accelerate the program.

LAUNCH NEW DIRECT BANK WITH CROSS-BORDER CUSTOMERS

The client, a large Canadian bank, had recently sold its U.S.-based subsidiary and wanted to launch a new direct bank that could support a group of cross-border customers retained after the sale. With a 25-person team, Capco managed the launch of a direct bank working with several third-party vendors and guided conversion of the cross-border customer group – on time and on budget. Our deep industry experience converting core banking platforms helped us streamline and manage this complex effort. The deal structure aligned Capco's engagement with the client's goals, risk, and rewards.

CREATE THE MIDDLE TIER OF A NEW DIGITAL BANK

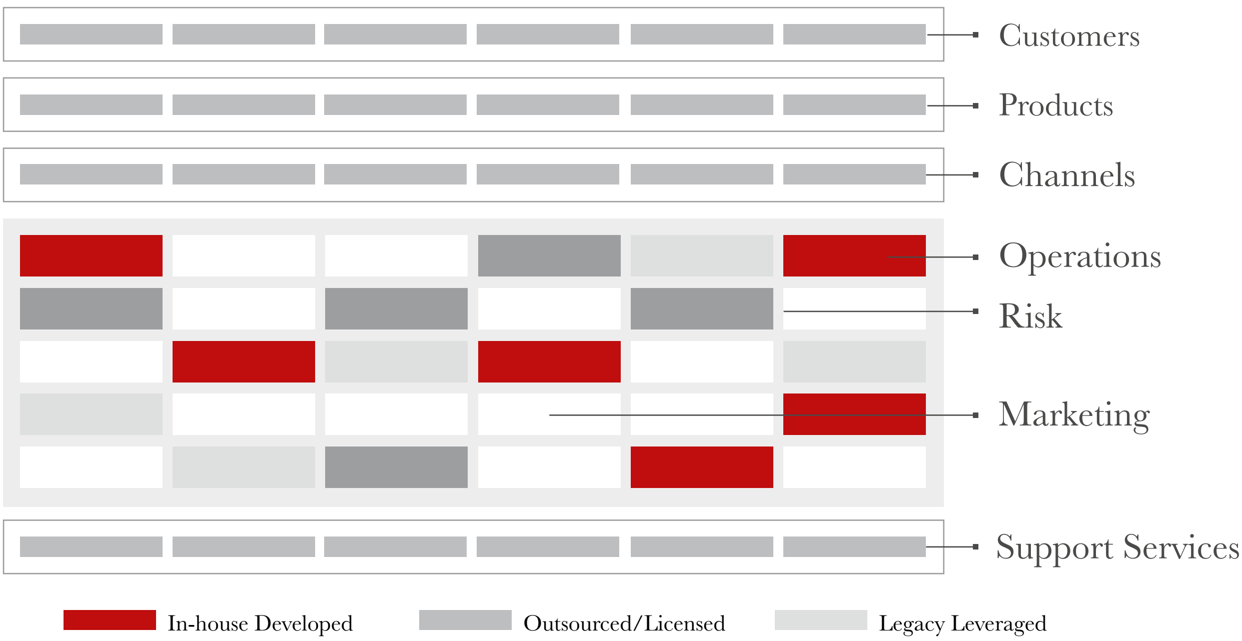
A major South American bank wanted Capco to architect and build the middle tier of a new digital bank. The bank chose Capco over a number of system integration companies based on our proven ability to deliver digital transformations, our subject matter expertise, and our strong market relationships. The new bank is live in the market and currently has more than a million customers.

DIRECT BANK LEADERSHIP

- We are a market leader in providing consulting services to launch new Digital and Direct Banks. We serve clients who are launching basic products as well as those who are reinventing what financial services means.
- Over the course of 2016 and 2017, Capco has assisted four discrete clients in their Direct Bank Launch journey.
- Our guidance on where to focus and how to design direct banks based around the unique market characteristics drives our client's success in the marketplace.

> *"Our agile approach means that clients can choose from a suite of services ranging from program support to program leadership to full delivery in launching a market-ready product."*

BUILDING A CUSTOM FUNCTIONAL ARCHITECTURE



LESSONS FROM THE FRONT LINES

From these and other experiences with digital bank launches in the United States and in other countries, we have distilled some important lessons. Here are a few that we emphasize to all clients:

LESSON 1

Invest early and heavily in the design and architecture of your new bank.
Why focus so intensely on the initial design? The long-term success of a direct bank depends largely on the quality of the customer experience.[9] In large part this means that your new digital bank must be distinct and differentiated from other banks already in the marketplace. This differentiation is difficult to achieve because currently available technology platforms have not caught up with market demand for improved customer experience. This requires that the user platform – what the customer sees – is to be largely a custom design.

LESSON 2

Pick your technology solution for tomorrow, not today.
The key here is to be forward-thinking and plan for what you may need for tomorrow. Think of this requirement as a 'known unknown.' Integration with new services and products are almost certainly a post-launch requirement for most de novo direct banks.

Why choose your technology for tomorrow's vision rather than today's imperatives? First, it costs more to retroactively modify your technology base in the future than to invest in better systems upfront. Licensing fees can mount, and system integration costs can be exponentially higher in the future – an especially daunting prospect if you just invested in a major systems integration a couple of years earlier.

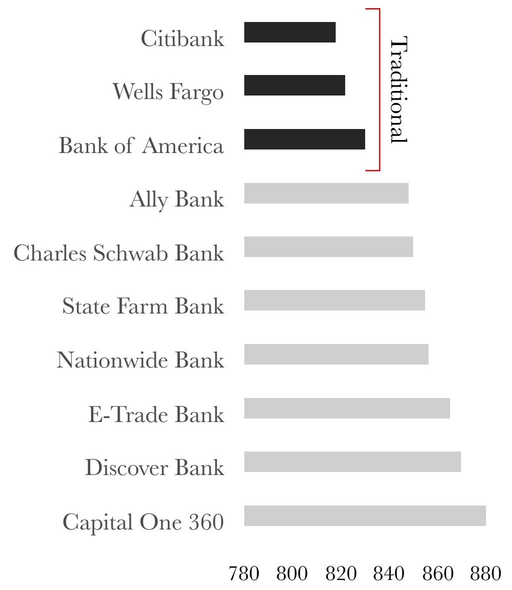
Second, with forward-looking technology, your bank will be better able to compete by offering superior products, services, and customer experiences. These superlatives are difficult to achieve with off-the-shelf technology.

LESSON 3

Utilize the de novo bank – your new direct bank – to set the new standard for operational and IT efficiency.
Capco played a key role in launching a hybrid direct bank (described above) that combined a deposit growth strategy with expansion into new regions. This bank was built with new technology, new operational processes, and a unique customer experience. We assisted in creating an account origination process that drastically reduced the time required for new account origination.

All these new direct bank elements – which Capco and our clients implemented in a smaller, more controlled environment– were more efficient and therefore more cost effective than legacy processes. The launch of this hybrid direct bank was so successful that new systems are now being tested and adopted to improve the bank's legacy operations.

BANK CUSTOMER EXPERIENCE RATINGS



[9] JD Power Ratings, 2017

THE CAPCO APPROACH

As you've just read, we've proven our approach to launching direct banks in real-life situations in several geographies, giving us an inventory of techniques and technologies to accelerate successful delivery of a new direct bank.

Working with Capco, our clients can be confident that they can quickly enter the digital space with a market-ready strategy aligned with their vision and brand and tailored to practices in their country. We do not build Potemkin banks[10] ; we are only interested in launching the real thing. We develop the strategy, trace the customer journey, build the digital infrastructure, and launch the bank. Breaking it down further, here is a typical template of what we do.

DIMENSION OF CUSTOMER EXPERIENCE			
Mass Afflu-ent	Affluent	High Net Worth	Ultra High Net Worth
Interaction Characteristics			
Channel Usage and Preferences			
Product Utilization			
Service Utilization			
Service Expectations			

INTEGRATING VISION/BRAND/STRATEGY

We begin with a strategic focus. Working closely with you, our client, we probe to gain a deep understanding of your enterprise vision, articulate the brand to distinguish it in the marketplace, and jointly define a suitable strategy.

One key question guides our validation of your digital vision: "What aspects of your business model need to change to realize your digital vision and opportunities?" We focus on a critical understanding of the products and services that your target customers want and need, building a consistent digital experience across all channels of your offering.

[10] Jost Hopperman, An Introduction To Digital Core Banking: Avoid The Potemkin Effect And Ease Your Banking Platform Transformation, Forrester Research, Inc., 2016, Like the fake villages erected by the 18th century Russian prince Potemkin, "Potemkin banks" look great but lack the underlying applications required to support full digital banking.

THE CAPCO APPROACH CONTINUED

TRACKING THE CUSTOMER'S JOURNEY

The next phase is to envision every step of the customer's journey, tracing their digital footsteps and blazing new pathways, rethinking and re-engineering worn-out systems with a highly functional digital product. To understand the customer journey, we begin by understanding the most critical element when launching a customer-centric direct bank: the targeted customer segments.

A clear understanding of the targeted customer segments is essential to creating the desirable customer experience. Capco helps our clients gain a deeper insight into the most promising customer segments through demographic research, focus groups, customer interviews, and other techniques. Then we turn to assembling the bank.

ASSEMBLING THE DIGITAL BANK

Taking what we've learned from our strategic assessment and evaluation of the customer journey, we begin the structural business design process with an overarching Target Operating Model that enables us not only to articulate the structure details but also to apply theoretical testing.

This approach has several advantages. Use of the target operating model instills a common approach and discipline – for the client and for Capco's team. It links intricate process flows to a set of business services, and it clearly identifies beginning and end points of each banking process. Because this model is repeatable and reusable, it's a key element in our arsenal of accelerators – those proven templates that Capco brings to new clients to 'accelerate' the launch of a new digital product.

LAUNCHING A DIRECT BANK

As the new digital bank is rolled out, Capco tracks the benefits being realized and helps clients pivot to achieve even more aggressive goals. For example, by identifying and prioritizing the profit drivers, we can evaluate the type and level of investment needed to achieve the maximum impact on:

- Operating cost
- Deposit growth
- Customer acquisition
- Customer experience

How we deploy next generation technology stacks and new business models enables clients to rapidly attain their strategic vision. We shape winning, market-ready strategies that embody the vision of your brand in the marketplace. We guide you through the critical decisions, apply rigorous logic to rethink business processes, and bring your bank to the forefront of the digital landscape.

"How we deploy next generation technology stacks and new business models enables clients to rapidly attain their strategic vision. We shape winning, market-ready strategies that embody the vision of your brand in the marketplace."

BANKING AT THE LEADING EDGE

Creating a direct bank can not only blaze a trail to more efficient operations, more customers, and new deposits for traditional banks. Embarking on this transformation can also create a shorter pathway to new products and services. Consider two of the most promising and active areas in financial services today: RPA (robotic process automation; also, robotics or robo) and API (application programming interface) integration. The same integrated digital platform that forms the backbone of a direct bank offers a cleaner, simpler infrastructure for adopting robo and API options. Let's examine each potential case more closely.

THE RPA ADVANTAGE

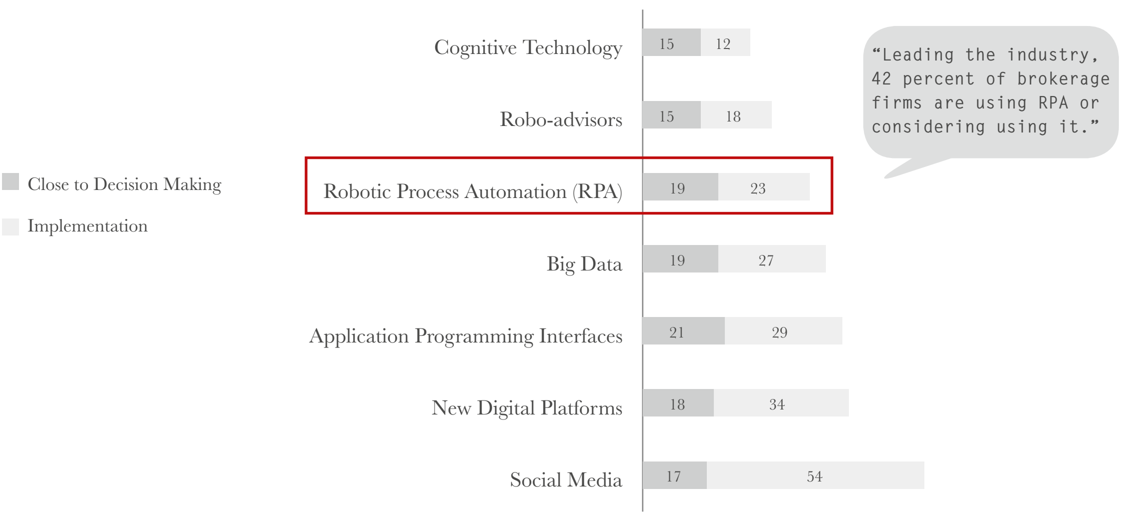
Just as Capco is a leader in ushering legacy banks into the digital marketplace, we also are a leader in analyzing and executing RPA strategies. Robotic Process Automation represents an opportunity for banks to improve their customer experience, reduce compliance risk, and achieve cost savings. RPA can improve the customer experience by greatly reducing the amount of time required for certain approvals. For example, one bank experienced a 90 percent reduction in the amount of time required to process customer advice notes, allowing this insurer to process the notes the same day. [11]

Similarly, some of the largest banks find that RPA can greatly reduce operational and regulatory risk - which amounts to billions of dollars in some cases - by reducing human error and speeding up processing. Through streamlined back office and middle office operations, banks can readily achieve 30 percent cost savings with anecdotal evidence of a payback period as short as three months.

That's where Capco can offer crucial support. We have expertise in developing a digital operating model and culture that supports this transformation. Our experience in direct banking and in digital advice are mutually reinforcing because we've learned that the same customers that are attracted to direct banks are also candidates for accepting digital wealth management.

DIGITAL INNOVATION ADOPTION TRENDS

WHERE IS YOUR BANK IN THE DIGITAL INNOVATION DECISION PROCESS?



Source: Dassault Systems - Digitization of asset and wealth management: promise and pitfalls

[11] Ovum, 2017, Robotics and Back-Office Automation in Retail Banking

Robo firms have low costs, but their business model may struggle over the long term because they have difficulty attracting customers. Traditional banks have the customer base and resources to launch a successful robo wealth product, but lack the necessary experience, focus, and long-term outlook.[12] Again, this is precisely where Capco can offer a tailored advice to exploit the potential opportunity in offering an expanded product set to existing clients.

THE API ECONOMY

When you place a 1-Click order through Amazon, you don't pay with coins or U.S. paper. You don't even pull a credit card out of your wallet. You simply touch your mouse pad or your smartphone to place the order, and a day or two later your package arrives at your doorstep. Your payment and your delivery information are processed automatically through Amazon.

That kind of customer experience doesn't just happen. It requires a backbone of technology, i.e. an API. Payments in Amazon fit seamlessly within their website. That's an example of an API-driven process, and it's very difficult to deploy an API consistently across your customer accounts within the legacy systems of the typical traditional bank, with its distributed and antiquated software.

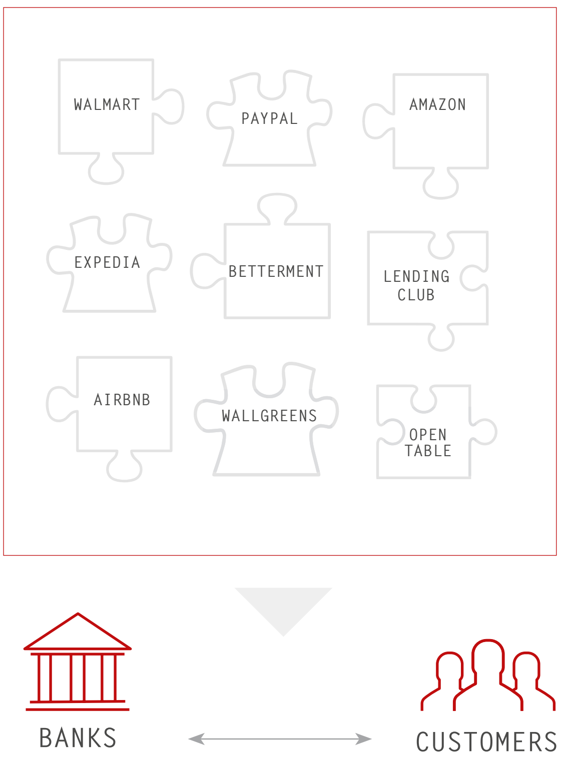
By contrast, the cleaner, streamlined infrastructure of a digital bank makes APIs much easier to deploy. APIs open a wide door to future product development – not only for financial institutions but also for companies that want to interact with a customer of a financial institution.

By setting up a clean API structure within your bank, there are two primary benefits. First, you can work with other companies so that you can offer your banking customers new and more convenient products and services. Second, other companies like Amazon or Lyft can undertake the product development to tie their customers into a digital bank function.

So, when you think - who is going to develop something new? - your answer is twofold: it can either happen at the bank, or it can happen outside the bank. Creating an open platform will enable developers to build new applications on top of the bank's infrastructure. This makes it possible for the bank to embed its services within the next generation of mobile applications. [13]

If you're prepared with an API structure in place, then you're better suited to have your customers participate in innovation more easily and rapidly – for things that we haven't even thought of yet.

APIS - ONE KEY TO IMPROVING CUSTOMER SERVICE



[12] Forrester Research, 2017, Banks Could Dominate Digital Investing, But They Won't
[13] The Capco Institute Journal of Financial Transformation, #44, 2016, The Rise of the Interconnected Digital Bank

BANKING AT THE LEADING EDGE CONTINUED

BRINGING TOGETHER A FULL SERVICE OFFERING

BANKING PRODUCTS	RETIREMENT AND BROKERAGE	ADVISORY
EARLY STAGE DIRECT BANKS	BROKERAGE ACCOUNT BALANCES REPRESENT 5% OF TOTAL DE-POSITS AT ALLY	
LATE STAGE DIRECT BANKS		NO ENTRY YET
NO ENTRY YET	ROBO-ADVISORY FIRMS	
ADVICE ONLY	REGISTERED INVESTMENT ADVISORS	
FULL-SERVICE, LOW-COST FUTURE STATE MODEL		
LOW BARRIERS TO ENTRY	MEDIUM BARRIERS TO ENTRY	HIGH BARRIERS TO ENTRY

LOW BARRIERS TO ENTRY

- With many established fintech and startup firms offering 'bank-in-a-box' platforms, launching traditional savings and CD (certificate of deposit) products with an outsourced back office are cost-effective; checking and loan origination is more complex, but also more profitable.

MEDIUM BARRIERS TO ENTRY

- Offering retirement and brokerage products represents an effort to create more revenue streams utilizing existing digital channels.
- Many banks that compete in this space leverage functional groups from sibling subsidiaries or acquired firms.

HIGH BARRIERS TO ENTRY

- Full-service digital-advice services require substantial investment in emerging technologies. This infrastructure, in its current state, is being organically created, as opposed to purchased or outsourced.

HAS BITCOIN BOTTOMED? A BRIEF HISTORY OF BUBBLES

AUTHOR:
Romal Almazo, UK
May 2018

INTRODUCTION

Bitcoin is ten years old this year. Created by the pseudonymous Satoshi Nakamoto, Bitcoin is the first cryptocurrency and the first commercial use of blockchain. Since its creation in 2008, it has taken close to nine years for Bitcoin to reach stratospheric bubble territory. In 2017 alone, Bitcoin's price increased 1,300 percent. But this was not even the strongest cryptocurrency performer. That honor goes to Ripple, at a staggering 36,000 percent![1]

Many correctly argue that this is the biggest asset bubble in history. Driven by irrational investor exuberance and a fear of missing out (commonly known as FOMO), it was typical to see a 10 times price increase across many cryptocurrencies in 2017. Stories abound the internet of people turning tiny investments, sometimes as little as a few hundred dollars, into millions. Within social media circles these people were referred to as 'lambos'. And the common catchphrase became "When lambo?", meaning when is your coin going to make you enough money to buy a Lamborghini? Even websites selling supercars were cropping up accepting only Bitcoin or Ethereum as payment[2].

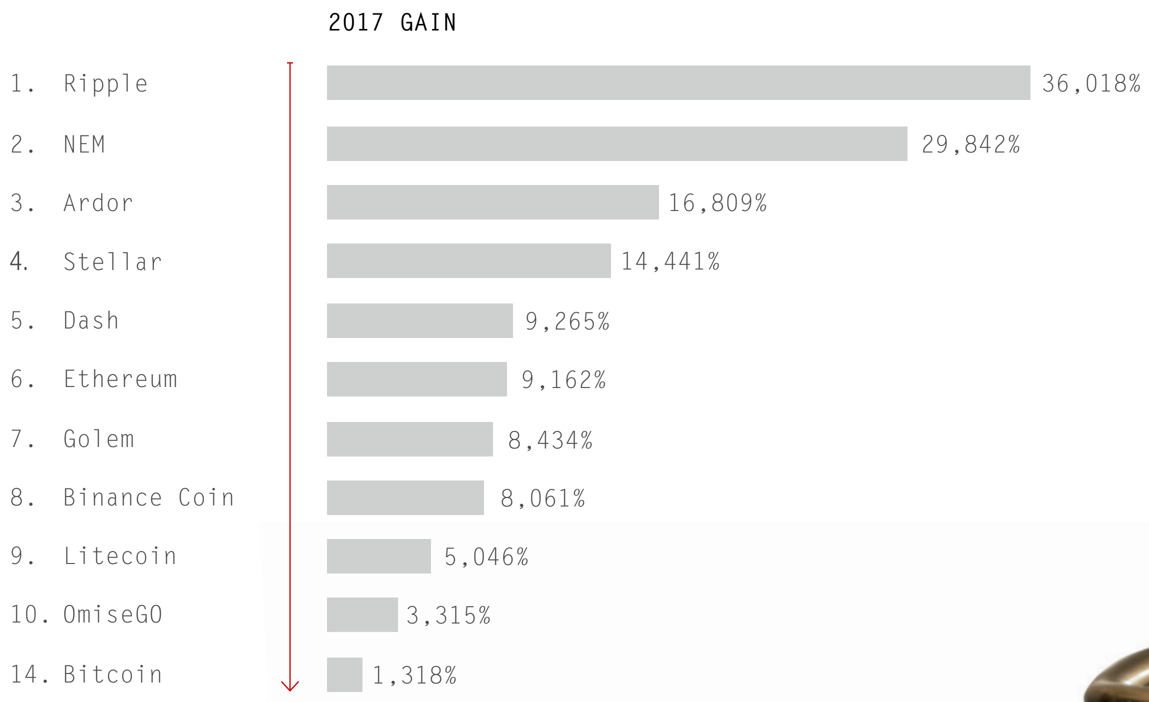
Fast forward to May 2018, and we have seen a 65 percent drop in the price of Bitcoin – from its all time high; along with a major slump in the majority of cryptocurrency prices.

To understand why this has happened and whether this has further to go, it's helpful if we turn to history.

> *"90 percent of South Koreans have heard of Bitcoin, yet only 8 percent have heard of blockchain [3]"*

[1] Quartz, 2018
[2] https://www.moonassets.io/supercars
[3] Bitcoin.com, 2017

2017'S BIGGEST CRYPTOASSETS RANKED BY PERFORMANCE



Source: Quartz, 2018

PARALLELS TO HISTORY – BUBBLES AND TECHNICAL INNOVATION

There are a number of historical precedents which can help us better understand the behavior of asset bubbles; two of which relate to mass technological innovation, like Bitcoin.

British Railway Mania in the 1840s and the Dotcom Bubble of the late 1990s were both the result of large-scale technological innovation, which promised to *change the world*. The 1840s Railway Bubble was driven by new feats of engineering and the Dotcom Bubble was fueled by the creation of the internet. And both bubbles ended badly. Even the 2008 Subprime Mortgage Crisis involved an innovative financial derivative product which led to the world's largest recession since the Great Depression. And now Bitcoin and the wider cryptocurrency market, with many of its vagaries, built on innovative blockchain technology, promises to *change the world*.

A review of all major asset bubbles in history (see table) suggests that price increases are most commonly driven by irrational investor behavior and fraud. Many investors also find it difficult to accurately measure the value of the underlying asset.

- **Dotcom Bubble**: by 2004, some nine years after the start of the dotcom bubble, less than half of the original companies remained and by 2015 the few that had survived became household names like Amazon and eBay. In fact, had you bought Amazon when it bottomed in September 2001, at around $6 per share you would have multiplied your investment 250 times at today's price! The Bubble 'burst' when it became obvious that companies were not making money. Companies were simply adding a '.com' to their business name and seeing their stock price rise overnight. IPOs were making dishonest and unachievable profitability claims. There was a lot of FOMO price action as well.

- **1840s British Railway Mania**: investors had become enamored with the growth prospects of railway companies, induced by promotional deals (often making dishonest claims), driven by the allure of technological advancements in railway engineering. When the railway bubble eventually burst in 1846 – ten years after it began, the majority of rail companies went out of business and railway stocks were ruined. It took at least another 20 years before the market showed any signs of recovery.

- **2008 Subprime Mortgage Crisis**: was the result of an overheated property market in the USA which spread to Western Europe. It involved an innovative credit derivative product linked to subprime borrowers who couldn't afford their mortgages. Mis-selling was rife. House prices nearly doubled between 2002-2006 and mortgage fraud or 'condo flipping' was rampant.[4] It all came crashing down when Lehman Brothers announced it was insolvent in September 2008. Like Bitcoin, people found it difficult to value the underlying asset.

[4] Investopedia

OTHER BUBBLES OF NOTE

- **Japanese Bubble**: in 1989, the value of the Imperial Palace grounds in Tokyo were greater than all the real estate in the entire state of California. Referred to as the lost decade (it actually lasted two decades), real estate experienced manic price activity, with prices in Tokyo's prime neighborhoods rising to levels that made them 350 times more expensive than comparable land in Manhattan, New York.[5]
- **South Sea Bubble**: in 1720, in return for a loan of £7 million to finance the war against France, the House of Lords (UK) passed the South Sea Bill, which allowed the South Sea Company to monopolize trade with South America. The company even underwrote the national debt. Shares rose to 10 times their value; speculation was rampant and all sorts of companies, some fraudulent or just optimistic were launched. The country went wild, stocks increased, and huge fortunes were made overnight. Unsurprisingly, stocks eventually crashed and people all over the country lost their money. There were also strong suggestions of fraud[6] with repeated allegations that the South Sea Company manipulated the price of government debt.
- **Tulip Mania**: in the 1600s, Tulip Mania gripped the Netherlands. The price of tulip bulbs skyrocketed in 1636, only to collapse a year later – soon after the introduction of cash settled futures in tulip bulbs. Price manipulation and fraudulent activity was also heavily present. However, it's probably worth noting that much of the Dutch economy was unaffected when the tulip price collapsed. This will be much the same if the Bitcoin price collapses 100 percent. Indeed, the potential impact of a Bitcoin collapse to the wider economy is estimated to be similar to a 1 percent fall in the stock market[7].
- **Bitcoin Bubble**: in 2017, nearly ten years after the creation of Bitcoin, it was common to see 10 times price increases in many cryptocurrencies, which many investors associated with classic pump and dump price cycles. Bitcoin increased 1,300 percent in 2017, and it is not uncommon to hear of fraudulent activity associated with ICO fund raising.

[5] The Bubble Bubble, 2012
[6] Today I Found Out, 2013
[7] UK Business Insider, 2017
[8] The Conversation, 2017

COMMON HISTORICAL THEMES WE CAN LEARN FROM

- **Technology which promises to change the world provokes irrational behavior**: technology-induced bubbles are nearly always driven by the development of new innovative technology which promises to change the world or acts as an opportunist subset for a wider economic climate or malaise, such as the 1840s railway boom and bust. History suggests that mass technological innovation takes many, many years to mature. In the case of the Dotcom Bubble, it took at least 15 years to achieve mass internet adoption after a crash.
- **Opaque underlying asset value**: in all asset bubbles relating to technological change, the price jumps ahead of its underlying value. Price does not truly reflect the benefits derived from the asset. It is also difficult to measure. Disagreements over asset value are common. In the case of Bitcoin, the underlying asset is blockchain related technology and in the case of the 2008 Subprime Mortgage Crisis, the underlying assets were opaque delinquent mortgages.
- **Investor exuberance**: investors get excited about the potential for the new technology before capabilities are realized or even properly understood. They buy in the hope of perceived future benefits, often buying into largely unproven technology. Price action is usually driven by frenzied speculation in the lead up to a crash. Irrational investor behavior and a herd mentality are also common.
- **Fraudulent activity**: bubbles nearly always involve fraudulent conduct or dishonesty. For example, the Dotcom Bubble involved IPO fraud and unfounded claims of future company profitability. The 2008 Financial Crisis involved mis-selling. The South Sea Bubble involved government debt manipulation. The 1840s Railway Stock Bubble involved dishonest promotional claims. And now the Cryptocurrency Bubble is littered with unsubstantiated and dishonest claims by ICOs. Pump and dump cycles are common soon after an ICO launch.
- **Correlation between futures and crashes**: if history is anything to go by, crashes follow soon after the introduction of futures contracts. The price of tulips skyrocketed in 1636 only to collapse, a year later – not long after the Dutch created a futures market for buying bulbs[8]. And we saw the Bitcoin price begin its large correction in December 2017, soon after CME and CBOE exchanges introduced Bitcoin futures.

BITCOIN AND ASSET BUBBLES, A BRIEF LOOK AT HISTORY…

Research in the table below suggests prices retrace 80-100% during a crash, with the exception being the gold price crash in the early 80s (65%) and the 2008 subprime mortgage crash (45%).

ASSET BUBBLE	BULL RUN	PRICE INCREASE	LOSS	COUNTRY	PRICE CRASH	YEARS TO RECOVER
Japanese Bubble[9]	1986-1991	Nikkei 4-fold Property 10-fold	Stocks $2 trillion Property $2,000 trillion	Japan	Stocks 70% Property 90%[10]	15- 20 years
1929 Wall St. Crash	1922-1929	5-fold	$400 billion	USA, EUR	80% by 1932	5- 20 years[11]
1970s Gold Prices[12]	1971-1980	7-fold	-	Global	65%[13]	15 years
Dotcom Bubble[14]	1995-2000	5-fold	$5+ trillion	Nth America	Stocks 90%	7-15 years
2008 Oil Bubble	2007-2008	3-fold	-	Global	120%	10+ years
Tulip Mania	1636-1637	20-fold	-	Holland	100%	never
2008 Subprime Mortgage Crisis	2000-2007[15]	100-fold CDO's[16]	$15 trillion	Nth America	45% (S&P 500)	10+ years
South Sea Bubble[17]	1710-1720	10-fold	$350 billion[18]	UK	100%	never
1840s Railway Shares	1837-1846[19]	3-fold	-	UK	60-80%	20+ years
2017 Bitcoin Bubble	2008-2017	11-fold+ (2017)	?	Global	65%	?

Source: Capco research, 2018

9 Wikipedia, Japan: the lost decade(s)
10 The Bubble Bubble, 2012
11 The New York Times, 2009
12 Medium, 2017
13 Buying Gold, 2008
14 Investopedia
15 Forbes, 2011
16 University of North Carolina, undated
17 Investopedia, 2015
18 Today I Found Out, 2013
19 Victorian Web, 2014

BUBBLES AND FRAUD

ASSET BUBBLE	PERIOD	ASSET CLASS	EVIDENCE OF FRAUD
Japanese Bubble	1986-1991	Property, shares	Reports of real estate investment scams involving 'shared' housing'[20]
1929 Wall St. Crash	1922-1929	Shares	Investors lost faith in a corrupt political elite leading to the creation of the SEC in 1934[21]
1970s Gold Prices	1971-1980	Gold, futures	Persistent claims of gold price manipulation by opaque cartels and governments[22]
Dotcom Bubble	1995-2000	Internet, tech stocks	IPO fraud, investor exploitation and company profits that never materialized[23]
2008 Oil Bubble	2007-2008	Oil, futures	Price manipulation by financial speculators and the oil cartel; lack of regulatory oversight[24]
Tulip Mania	1636-1637	Tulip, futures	Government interference in Tulip futures and options contracts to manipulate price[25]
2008 Subprime Mortgage Crisis	2000-2007[26]	Property, credit derivatives	Widespread mortgage mis-selling, condo 'flipping' and credit assessment fraud[27]
South Sea Bubble	1710-1720	Shares, government debt	Mis-priced government debt and overhyped valuation of the South Sea company which was in fact worthless at the time[28]
1840s Railway Shares	1837-1846[29]	Shares, government debt	Stock price fraud, dishonest promotional claims and company mismanagement[30]
2017 Bitcoin Bubble	2008-2017	Digital assets, cryptocurrency	Research suggesting that 80% of Initial Coin Offerings (ICOs) are scams[31]

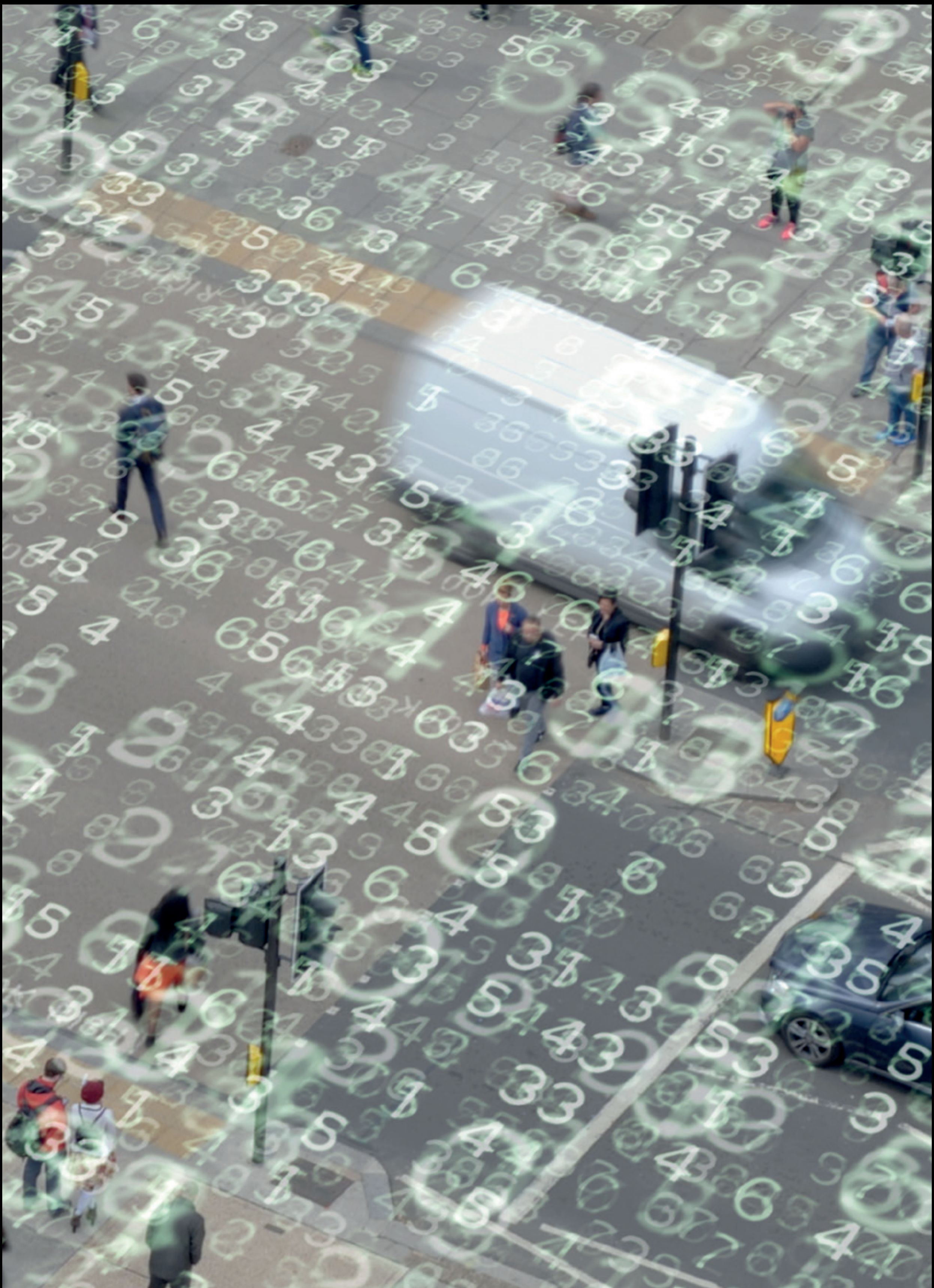
Source: Capco research, 2018

[20] The Japan Times, 2018
[21] The Market Oracle, 2010
[22] Kitco, 2014;
CIA declassified memos, Zero Hedge, 2017;
Seeking Alpha, 2017
[23] The Guardian, 2010
[24] China Dialogue, 2012; CNN, 2008
[25] The Economist, 2013
[26] Forbes, 2011
[27] The New York Times, 2015
[28] Today I Found Out, 2013
[29] Victorian Web, 2014
[30] Ibid
[31] Bitcoin.com, 2018

SUMMARY

Bitcoin and the wider cryptocurrency market align closely to common themes in major asset bubbles in history. The themes most commonly associated with bubbles include frenzied price activity, irrational investor behavior, fraud and asset values which are difficult to measure.

Drawing parallels with bubbles relating to mass technological innovation would suggest Bitcoin and the wider cryptocurrency market is no different.



HOW FIRMS CAN RECOVER THE HOLY GRAIL FROM GDPR

AUTHOR:
Scott Bancroft, UK
July 2018

INTRODUCTION

In this article Scott Bancroft discusses the five key steps businesses must take to gain from General Data Protection Regulation (GDPR).

In the run up to the GDPR deadline on 25 May, many companies were largely struck by panic. This new EU data privacy law, designed to overhaul how businesses process and handle data, certainly presented some operational challenges for companies.

However, as they joined the mad rush to comply or die, many financial services firms seemed to miss that getting GDPR 'right' could bring them opportunities that most have been seeking to fulfil forever – a single view of the customer's data and effective information management in the digital age.

Getting a single view of all data held on a customer has largely become the 'holy grail' these days - allowing businesses to track their customers and communications across all marketing channels, and as a result, turn that data into viable business intelligence. While the big online retailers have been making a success of this for years, few businesses have in financial services. Why? Many haven't had the financial impetus before, and their technology infrastructure hasn't been up to it.

So how can GDPR facilitate? Most recent financial regulations (such as MiFID II, Open Banking and GDPR) all have elements of data privacy requirements that must be fulfilled. If companies manage GDPR compliance properly, they will spend significantly less time, effort and money on managing other regulations - and achieve a much-improved level of information management – irrespective of the type of information – in the process.

This requires a unified and consistent approach to information throughout its lifecycle, not forgetting record management across the business, which with GDPR returns with a vengeance. Under GDPR, unused or 'stale' data must now be disposed of, thus giving companies the ability to properly respond to data subject access requests and perform defensible disposition.

HERE ARE MY TIPS ON HOW YOU CAN DISCOVER THE HOLY GRAIL:

1.

ASSESS YOUR EXISTING 'MATURITY' IN TERMS OF GDPR COMPLIANCE… AND IDENTIFY ANY GAPS

This requires looking at the maturity of your whole organization – and additionally from the perspective of company functions handling customer data, such as human resources, sales & marketing and finance. Remember: the regulator won't absolve you if all but one of your teams is GDPR compliant!

Therefore, company processes and systems should cover all types of business information, not just those pertinent to GDPR. This includes all information repositories in a company, down to end-user computing equipment.

2.

SET UP AN INFORMATION MANAGEMENT PROGRAM

Once a gap assessment has been completed, create an internal team responsible for information management strategy. This needs to have support at board level, to give it the prominence it deserves.

The program should not just concern GDPR, which will undoubtedly be updated or surpassed by new laws and regulations in due course, but all data matters.

To be truly effective, the team must additionally contemplate how it can consolidate existing regulatory and compliance change programs throughout the business. For instance, many businesses have multiple enterprise resource planning (ERP) systems. That in turn, means going through the GDPR consent process multiple times, but also adding to the risk of a breach!

3.

FILL IN THE GAPS YOU FIND FROM YOUR ASSESSMENT

The difficulty comes with discovering where data comes from, how it is used, and where it resides. Therefore, data management needs to become a continual process of reviewing and tracking these elements.

It should be noted that this is not a purely technology-related activity – and will include non-techie representatives to fully understand the business processes that the information supports.

HERE ARE MY TIPS ON HOW YOU CAN DISCOVER THE HOLY GRAIL: CONTINUED

4.

BE CERTAIN OF YOUR EVIDENTIARY CAPABILITIES – NOW AND FOR THE FUTURE

Go through GDPR and read it - yes, all 88 pages! When it comes to data protection, it's no longer 'innocent until proven guilty', the regulator now needs proof of compliance. Enlisting the help of internal audit should help with this.

To put this into motion, consider what evidence you need, why you need it and how long you'll retain it. Therefore, knowing the legal citation for retention of information of all types across the whole business becomes an imperative.

Also, GDPR gives data subjects additional rights and specifies the times in which companies must comply. This has the potential for litigation to become more commonplace in financial services and some people will want to take advantage of GDPR. For example, GDPR requires you to delete data subject information within 30 days of the request (up to 90 if sufficient complexity can be demonstrated). Yet, you need to know where the data is, that it uniquely identifies the requester, that they are actually the requester (as opposed to a fraudster or third-party), and that the data does not have to be retained for any other legal or regulatory reason. This is a true step-change in the ability of companies to manage information – could your company do this today?

5.

KNOW YOUR RISKS

You need to ascertain whether the other third-parties (i.e .vendors) you are working with are also GDPR compliant. Your GDPR contracts will therefore require model clauses and risk assessments to ensure these third-parties up to speed. This will in turn give you the opportunity to review both data privacy contractual terms, controls and drive improvement within your third-party risk management process; resulting in a far clearer picture on the level of risk and allows more accurate evaluation of whether this is within your risk appetite.

FINALLY…

GDPR is what we all should have been doing for years, however, it should be seen as an ongoing process that does not finish at the end of a specific project. It may be painful, but it's absolutely the right thing to do. As technology and the world moves on, GDPR will evolve.

Do not only think about how you meet the minimum requirements of GDPR, but how you'll use the lessons learnt to anticipate and be ready for the next generation of data privacy requirements. Wouldn't it be a differentiator if all customer data was available quickly and simply - benefiting both the business and the consumer? That has to be the Holy Grail.

How great would it be to go to your boss with a cheaper and more streamlined approach to information management?

CAN'T BEAT 'EM, JOIN 'EM? THE RISE OF THE NEOBANK

AUTHOR:
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August 2018

INTRODUCTION

The number of neobanks is rapidly increasing, as is the threat to existing banks' market share and revenues. What makes these new market entrants so special? In these highly-competitive digital times, neobanks offer an exciting alternative to existing legacy banks: they are typically mobile-only, built on low cost, greenfield tech and offer a modern and dynamic customer experience.

In the UK, we have seen a lot of neobank activity recently. Monzo has hit 500,000 customers[1], Starling Bank is now offering business solutions and Tide will soon provide an international payments service[2]. In Europe, we're similarly seeing new players emerge, such as N26, a mobile retail bank, and Penta, also German, but aimed at small to medium business customers.

The message from the neobanks to incumbents is clear: we're here to stay and we're coming for your clients.

So...

- Should incumbents be worried?
- How do you turn a neo threat into an opportunity?
- What are the options?
- What should banks do next?

> *"In these highly-competitive digital times, neobanks offer an exciting alternative to existing legacy banks: they are typically mobile-only, built on low cost, greenfield tech and offer a modern and dynamic customer experience."*

[1] Monzo, 2018
[2] The Telegraph, 2017

SHOULD INCUMBENTS BE WORRIED?

The advancement of cloud technology, API-driven architecture and third parties providing software as a service has dramatically reduced the time to market for new products, brands and in particular, mobile-only neobanks.

These new startups are going to market with prepaid card 'accounts' in under six months, allowing customers to make transactions, payments and other basic functionalities with ease. To do this, they are quickly integrating third party, cloud-based software with open APIs for account opening and 'know your customer', document authentication, back office processing, CRM, AML, credit checks and banking ledger activities.

Combined with their agile way of working, effective marketing and 'growth hacking' prowess, neobanks are becoming very attractive to customers. This was evidenced in a recent customer satisfaction poll[3], where two of the largest UK neobanks (Monzo and Starling) beat all existing UK banks to top of the survey. In terms of acquisition, some neobanks in the UK are onboarding over 3,000 new business customers per month. Acquisition rates that are making existing banks very nervous.

However, our survey found that the number of customers who fully switch from their main bank account to a neobank account is still quite low (~22 percent). Most neobank customers keep their main bank account active and use their neo account sporadically, e.g. the main bank account for bills and direct debits and the neobank for everyday spending.

We found that the main reason for this was that customers didn't fully trust the neobank brand and had concerns over security, despite their deposits being protected by the FCSC scheme.

But existing banks should not be complacent. They should be worried about how quickly neobanks and startups can go to market, take market share and impact traditional revenue lines (e.g. international payment revenue being reduced because of firms like TransferWise).

However, this is just as big an opportunity for existing banks as it is a threat. They can leverage their established brand and reputation for security to launch their own mobile offering, perhaps with a new exciting brand on a tech stack that is lower cost and competes with the neobanks and does things they can't, such as taking deposits of cash in branches.

"These new startups are going to market with prepaid card 'accounts' in under six months, allowing customers to make transactions, payments and other basic functionalities with ease."

[3] Finextra, 2018

HOW DO YOU TURN A NEO THREAT INTO AN OPPORTUNITY?

A two-pronged approach is required. First, an established bank, too, can be a neobank. They can use the same technology, launch a new brand but they need to do it like a startup would. To get to this point however, incumbents must remove the red tape and work in a lean and agile way with relentless focus on execution to be quick to market.

With the introduction of PSD2 and open banking, the time to act is now, as more and more third-party services become easier to integrate with. In parallel, legacy banks need to play to their strengths, look at their core competencies and exploit the strategic advantage they have over neobanks. Indeed, existing banks are arguably the best in the world at cash handling and securing your money, for example. A mobile-only offering that is backed by the security and trust of an existing bank with deeper banking functionality could compete and win against neobank propositions.

Legacy banks should look at this initially as an experiment. They can get a minimum viable product to market in under six months, where they can test the proposition, brand and concept for less than £5 million. If successful, they can then build out the proposition and technology to create a longer-term banking technology stack that runs at a fraction of the cost of the existing tech stack.

Suddenly, this becomes a major competitive advantage against other existing banks and can provide a long term, transformational banking platform to move existing customers onto. That then increases existing customer satisfaction, further reduces costs and improves profitability.

WHAT ARE THE OPTIONS?

For traditional banks that are looking to move into the neobank space, there are several options they can consider:

TO PARTNER OR NOT TO PARTNER?

Once the core competencies are established, existing banks need to decide which aspects of the customer relationship and banking value chain they want to continue to own and which ones they are willing to give away.

With the plentitude of startups and fintech firms specializing in individual parts of banking e.g. Pension Bee for pensions, Transfer Wise for international payments, it could be beneficial for banks and customers alike to partner with these providers and stick to what the bank is best at. We are seeing this trend with neobanks, where they are launching marketplaces within their own app to link customers to providers that do some things better than they do.

ME TOO

Existing banks can simply copy the neobank approach and play on their established trusted brand to retain existing customers and attract the generation/segment of customers who are more concerned about security and don't tend to be early adopters, e.g. a new brand powered by an existing brand.

ME TOO PLUS

Launch a competing proposition with a card and an app to make everyday transactions and payments but move into untapped areas and product ranges. Have a killer feature that differentiates your brand from other neobanks. Few neobanks are offering savings and investments accounts, for example. By combining the type of functionality that we see in the likes of Moneybox or Wealthily with an everyday current account could be attractive to consumers.

Further examples include wealth and asset managers. They have a huge advantage over neobanks because they can give advice and have investment infrastructure and an advisor network that can integrate with a mobile app to link spending to saving and investments. The same goes for pension and insurance providers, even investment banks, that have previously never thought it feasible to have retail or commercial banking offerings in the market alongside their core business.

A MIXTURE OF THE ABOVE

We recommend the me too plus option but also partnering with third-parties to further bolster your market offering and differentiate in an increasingly crowded market.

WHAT SHOULD YOU DO NEXT?

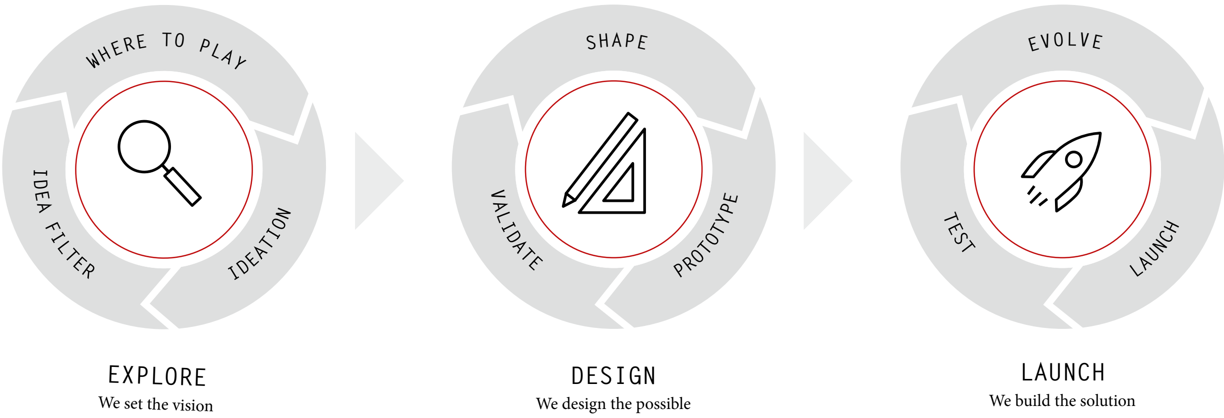
Experiment, fail fast and design with customers. Test a proposition in the market, design it with customers to do the jobs they want to do, learn from it, refine it and pivot if necessary. Act and execute like a startup would, and never lose sight of the customer experience.

We have done this via our three-stage methodology and launched two neobanks with the backing of an existing bank in the last 12 months. It can cost less than £5million, be done in six months and have live customers using a platform that costs a fraction of existing IT infrastructure.

It requires group level support for agile, mission-based teams to work independently and not get delayed by bank governance and red tape.

The age-old expression "the customer is always right" has never felt so apt in today's markets. There is constant pressure on banks to remain relevant to customers and improve their product offerings. Just as we have seen well-loved businesses fall out of favour in the retail space due to digitally-focused brands, new, mobile-savvy entrants are now encroaching on the turf of long-established financial brands and consumers are intrigued.

But - another age-old expression springs to mind: "Can't beat 'em, join em." Incumbents are in a great position to go on the attack themselves and we're right behind them.



> *"Test a proposition in the market, design it with customers to do the jobs they want to do, learn from it, refine it and pivot if necessary."*

A NEW DAWN: DRIVING INNOVATION IN CAPITAL MARKETS

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September 2018

Originally from Raconteur, distributed in The Sunday Times

In an environment of tighter regulatory constraints, low interest rates and sluggish economic growth, capital markets have faced increasing pressure to demonstrate both their viability and profitability. While capital markets have been slower than some of their financial services counterparts to embrace innovation, the need to utilize new capabilities and think beyond the traditional business model has grown too compelling to ignore.

According to James Arnett, the question for capital markets is no longer whether to invest in innovation, but how to do so effectively and to their best advantage. As capital markets move beyond the regulatory agenda which has dominated the industry for the past eight years, Mr Arnett believes there is a definite shift in mindset towards revenue enablement initiatives, as well as renewed focus on cost reduction. Through the implementation of next-generation technology, spanning microservices, cloud and grid technology, banks will be able fully to harness the true power of data.

Mr Arnett explains: "Historically, capital markets have developed new products only after recognising a gap in the market or the opportunity to create a margin, rather than deliver a data-driven proposition that anticipates what clients may need. Leveraging next-generation technology will reduce costs and enable banks to understand and commercialize the wealth of data they have to help them better anticipate and meet the needs of their consumers."

He expects investment banks increasingly to move to a model where they create alternative products and services based on trends they see in the transactions their clients make, as well as general market movements. At a time when margins has become a leading watchword, there are only two ways for investment banks to remain profitable: shredding costs and embracing innovation. And that means self-disruption.

> *"While capital markets have been slower than some of their financial services counterparts to embrace innovation, the need to utilize new capabilities and think beyond the traditional business model has growntoo compelling to ignore."*

According to Kim Sgarlata: "Focusing on what you're good at, and continually looking to improve and build upon those assets, is something we widely see in other industries, but need to see much more in the capital markets space. Innovation should be a tool used to help banks maximize their potential."

In the face of rising competition from startups, the need for banks to play to their strengths is key. Arguably the greatest loss for banks to competitors will not be from revenue, but data. The trend is already firmly underway in the retail market and, while the threat will be less invasive in capital markets due to the different nature of the beast, banks cannot afford to be complacent.

Jibran Ahmed says startups will begin by taking small slices of business, for example by offering a faster, cheaper foreign exchange capability, rather than offering a full suite of capital markets products to rival legacy banks. But this move will have a detrimental impact on a bank's view of its client.
Mr Ahmed explains: "In this scenario, an incumbent would lose sight of certain transactions, in which their institutional client is engaging. This could reduce their ability to utilize next-generation data analytics to offer suitable products, such as hedges and interest rate swaps, at the opportune moment. This loss of data and the associated insights could be substantial for future growth, particularly in a world where new entrants are nimble, data-driven organizations capable of extracting valuable insights from their data."

> "*Leveraging next generation technology will reduce costs and enable banks to understand and commercialize the wealth of data they have.*"

Technologies such as blockchain, machine learning and artificial intelligence are attracting lots of attention from the capital markets sector. However, the successful implementation of these technologies and the realization of the touted benefits will be heavily dependent on how they are applied. This includes careful consideration of the types of problems they can solve, curating the relevant data and fostering a culture where new technologies can be implemented safely, pragmatically and with more agility than most banks are capable of today. Mr Ahmed says: "While realising the benefits of blockchain technology is still several years away for capital markets, machine learning can offer significant benefits in the very near future. Banks can identify patterns across data sets and accurately predict potential scenarios ahead of time. In addition to customer-facing use-cases, machine-learning can be used to enhance the automation of many time-consuming tasks that plague the back offices of incumbent banks. It can also enable smarter, faster decision-making in complex areas such as risk and collateral management."

Ms Sgarlata points out: "The way forward is collaboration with fintechs, rather than competing with them. Banks should embrace fintechs as partners and create a trusted partnership network. The concept of open innovation, where you look beyond your own four walls for inspiration and input, will ultimately make banks stronger, leaner and better prepared for future changes to the markets." Exactly where the market is headed in terms of regulation remains an unknown. However, given the current political climate, with the outcome of Brexit negotiations and the impact on the UK financial services market still posing a huge question mark, the effects of capital and collateral optimization have never been more important. Ms Sgarlata says: "Many of the larger banks are sitting on a gold mine of data. The most successful ones will be those who analyse and commercialize that data by making use of their findings to better serve their clientele.

"While there is no mandate to share data between investment banks, if someone finds a compelling use case, which offers significant benefits to the banks or their clients, adoption will be forced through the need to compete."

Banks should begin to explore the idea of working together to create a new ecosystem in which they buy, sell or even share services with each other. This would create higher standards for the industry and provide the best solutions to customer. But to be able to respond to future changes in the market and harness innovation to its best ability, banks must also adopt a more agile way of working, with greater cross-team collaboration. According to Ms Sgarlata, innovation is not limited to technology and processes, but can disrupt and improve the base business model.

She says: "Over the next three years, banks should be focused upon transforming their workforce as part of their innovation process. They need to begin reinvesting in their people, including the ways in which they work and the environments they work in. This builds a culture that recognizes the value of staff while simultaneously improving retention."

Arguably one of the greatest hurdles facing legacy banks is their legacy architecture and culture, which limits their ability to implement changes swiftly. Mr Ahmed explains: "The issue you have with legacy architecture is that a change in one system may have a domino effect across other systems and business functions."

Capital markets are undoubtedly entering a new era. A rise in entrepreneurship, maturing markets and growing financial globalization mean the demand for capital markets will remain strong, but only those who embrace innovation and a new way of working will flourish.


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MONEY LAUNDERING: TOP TRENDS AND HOW TO PROTECT YOUR INSTITUTION

AUTHOR:
Peter D. Dugas, USA
September 2018

TRENDING AML THREATS

The United Nations Office on Drugs and Crime estimates that illicit cash flows account for 2 – 5 percent of the global GDP, amounting to $800 billion to $2 trillion per year. Financial institutions are increasingly aware of the ways their organizations may unwittingly play a part in this statistic, and the implications of faulty safeguarding, both to their individual institutions and to the financial system as a whole.

The idea of combatting money laundering is not a new one, and every financial institution likely has a system in place to comply with applicable laws and regulations. Within the last few years, institutions have seen shifts in certain aspects of their anti-money laundering (AML) programs, including the swift progression of technology and the risks posed through cybersecurity and virtual currencies; new requirements for beneficial ownership identification; and periodic updates to sanctions lists.

However, as AML trends continue to develop, institutions are sometimes so focused on the tangible new legal obligations and compliance requirements that identifying and tracking new trends is overlooked. In this article, we highlight three areas of money laundering risk that have seen a rise in visibility in recent years, and what the implications are for proactive, forward-looking AML programs. We end the article with some suggestions for hands-on best practices, to ensure institutions can evaluate whether they have the tools in place to combat these trending threats.

A QUICK BACKGROUND ON AML AND RELATED LAWS AND REGULATIONS

1970

The Bank Secrecy Act (BSA) passes into law, including provisions on reporting requirements, such as the Currency Transaction Report (CTR), intended to help law enforcement find proceeds derived from illegal activities, primarily drug trafficking. In an effort to remain anonymous, most criminals conduct illegal transactions with cash, which is harder to trace than other forms of payment. CTRs were designed primarily to catch the placement of illicit cash into the financial system.

1986

The Money Laundering Control Act passes into law, making money laundering a federal crime.

1990

Financial Crimes Enforcement Network (FinCEN) is created under the Department of the Treasury (Treasury). Established as the financial intelligence unit (FIU) for the U.S., "Its original mission was to provide a government-wide, multi-source intelligence and analytical network to support the detection, investigation, and prosecution of domestic and international money laundering and other financial crimes." Today, FinCEN still acts as intermediary between financial institutions and law enforcement, by maintaining databases of CTRs and SARs.

1994

The Annunzio-Wylie Money Laundering Suppression Act passes with requirements for Suspicious Activity Reports (SARs). This makes financial institutions responsible for reporting activity that they suspect is intended to conceal the source of funds that may be in violation of the BSA, such as structuring transactions to avoid CTR filing. SARs help law enforcement detect money laundering both when illicit funds are placed back into the financial system and in the concealment phase.

2001

After the terrorist attacks on September 11, 2001, the USA PATRIOT Act enacts twelve specific sections focusing on preventing and detecting international money laundering and shell banks that serve as fronts in money laundering on behalf of terrorist financing.

TRENDING AREA ONE: PROFESSIONAL MONEY LAUNDERING

On July 26, 2018, the Financial Action Task Force (FATF) issued a report on professional money launderers (PMLs) – third-party individuals, organizations or networks who, for a fee or commission, specialize in enabling criminals to evade AML and counter terrorist financing (CTF) safeguards and sanctions in order to realize profits from illegal activities. The report aimed to help countries identify and dismantle these professionals by looking at the key characteristics, tools and techniques PMLs use to engage in this business.

WHAT ARE PMLS?

- PMLs profit from revenue-generating criminal activity, but are not engaged in the predicating, revenue-generating crime.

- They act as experts to move illicit funds without detection, concealing the nature, source, location, ownership, control, origin and/or destination of funds to avoid detection.

- The models for such laundering initiatives can be full and complex in scope, or tailored to an individual activity; PMLs can be involved in one step or the entirety of the money laundering process for each engagement.

- PMLs provide a list of services, and often do not differentiate between the different types of crimes from which the funds in question were derived.

HOW DO PMLS OPERATE?

- PMLs generate their customer base primarily through word-of-mouth, though there is also evidence of advertising efforts on the Dark Web.

- PMLs charge for their services by taking cash in advance, transferring a portion of the illicit funds to the PML's own account or integrating commission into the transaction itself.

- Generally, there are three steps to a PML's services: collecting the criminal proceeds, layering the funds to convolute streamlines and returning the laundered funds to clients for investment or asset acquisition.

- There are four main types of PMLs: money transport and cash controller networks; money mule networks; digital money and virtual currency networks; and proxy networks.

- An individual PML's tactics can overlap between clients, and multiple organized criminal groups' funds might therefore utilize the same channels for certain steps of the money laundering cycle.

WHAT ARE SOME METHODS PMLS USE?

- **Trade-based money laundering**: In 'trade- based money laundering' (TBML), bad actors can interact with the financial system through seemingly legitimate businesses, often choosing high-risk markets such as precious metals. By misrepresenting the value, quantity or quality of goods, it is then possible to exploit the international trade system, hiding the true sources of funds and transferring funds across international borders. These models can range from simple to highly complex, but they continue to scale up as the global trade market grows. For example, PMLs can purchase high-value goods with criminal proceeds and re-sell the goods overseas; falsify the number or value of goods being shipped; or use money brokers.

- **Account settlement**: Because the PML is providing services to criminals who have cash that they need to disperse and other criminal groups which need cash to pay their networks and workers, the PML can provide an account settlement mechanism and make a profit in the process.

- **Underground banking**: Used to bypass regulated financial institutions, this could use a medium of exchange such as casino chips or alternative banking platforms (a form of shadow banking that uses some services of a formal banking system, but has its own parallel accounting and settlement system with the backbone of custom transactional software).

WHAT RISKS DO PMLS POSE?

- PMLs often operate on a large scale and across international borders.

- Many countries do not have sufficient programs in place to detect third-party laundering activity, and many countries limit prosecutorial action to first-party criminals, making it difficult to take down PMLs.

- The actors themselves often have no criminal background, and sometimes come from professional and legitimate backgrounds. They are therefore harder to detect, as they are unlikely to show up in searches and are well-trained and experienced.

- Compartmentalized organization structures and relationships can mean there are several degrees of separation, and therefore traceability, between those in charge of the funds-generating activity and the masterminds behind the laundering. This means that even if a PML is detected, the criminal groups it supports may still be protected, and vice versa.

- PMLs are too smart to use only one bank; therefore, a single institution, at best, is only going to detect one small part of the overall operation.

DETECTING AND DETERRING PMLS

Depending on how the PML uses domestic and international wire transfers, a suspicious activity rule which analyzes originator and beneficiary names for 'many to one' transactions could detect a part of the scheme. Additionally, the companies perpetuating money laundering activities would likely receive funds from seemingly unrelated businesses which don't connect with the supposed purpose of the main business. It seems that the best way to fight these operations would be to have a focused national-level law enforcement and supervisory action, in addition to appropriate regulation, cooperation and information exchange internationally.

The FATF report dives into the specific structures of PML networks, types of tactics PMLs use, examples of PML activities, tools and techniques PMLs utilize, types of actors involved in PML initiatives and areas where PML usage is prevalent, but does not discuss combatting PMLs. However, FATF also created a non-public version of the report (for Members of the FATF and the FATF Global Network) to provide recommendations for the detection, investigation, prosecution and prevention of PML activity. We may begin to see examples of how these recommendations are utilized in the near future.

Looking forward, Capco CRI believes this will continue to be a trending issue on a global level, and it seems likely that more government agencies will publish additional information and guidance on the subject, to highlight functions that may deter this unique criminal activity.

TRENDING AREA TWO: THREAT FINANCE

Threat finance – the methods and tactics organizations use to fund activities that threaten national and international security – continues to be a major concern, both globally and in the U.S. This type of money laundering disguises large proceeds from serious crimes as legitimate so that they can be used by actors such as:

- International terrorist organizations
- Drug cartels/narcotics traffickers
- Transnational organized crime groups
- Arms traffickers
- Wildlife traffickers
- Cybercriminals
- Identity-related criminals
- Organ traffickers
- Illegal mining operations
- Pirates
- Counterfeiters

Among the largest issues in combatting threat finance are the low barriers to trade and movement of capital on a global level, as well as technological innovations that make it almost impossible to detect and obstruct illicit operations.

There are overlaps in the methods threat finance uses and the methods PMLs and other types of money laundering utilize. Some methods of threat finance include:

- Trade-based money laundering (TBML)
- Real estate
- Gambling junkets
- Mining
- Digital currencies
- Phishing
- Online gambling
- Dark markets
- Ransomware
- Online advertisement fraud

Threat finance protections are constantly changing as high-level intelligence units monitor global risks. For example, the Office of Foreign Assets Control (OFAC) regularly updates its sanctions lists in response to a variety of intel on bad actors and potential threats. Some recent additions to these lists include:

- **August 21**: OFAC designated two Russian entities and six Russian vessels involved in the ship-to-ship transfer of refined petroleum products with North Korea-flagged vessels, an activity expressly prohibited by the United Nations Security Council (UNSC).

- **August 21**: OFAC designated two entities and two Russian individuals based on the actions they undertook for Divetechnoservices, a Russian entity sanctioned on June 11, 2018 (for procuring a variety of underwater equipment and diving systems for Russian government agencies, to include the Federal Security Service (FSB), itself sanctioned in March 2018).

- **July 31**: OFAC designated two individuals (financial facilitators) for acting for or on behalf of Lashkar-e Tayyiba, a terrorist organization based in Pakistan.

- **July 25**: OFAC designated five entities and eight individuals, who are key components of a vast network procuring electronics on behalf of Syria's Scientific Studies and Research Center (SSRC), the agency responsible for the development of Syria's chemical weapons.

In addition to keeping track of these lists and staying abreast of urgent alerts, the C-level suite continues to have concerns regarding threat finance. In recent interviews with top executives of financial services institutions, some of the common themes in relation to threat finance revolved around the idea that technology today is both the most advanced and complex it has ever been, and it continues to evolve rapidly.

The positive side of this is that available safeguards are increasingly powerful, and the potential for collaboration, aided by technological innovations, leads to an interconnectedness that is critical to combatting threat finance. But, as financial institutions become better at predicting, detecting and preventing threat financing efforts, bad actors also become more sophisticated.

It has become best practice, therefore, to no longer use a 'check box' approach to financial crime safeguarding and compliance. It is essential that financial institutions have the ability to effectively demonstrate that their AML/CTF systems are working against specific types of threats.

In the Best Practices section at the end of this article, we will provide some ideas for a more integrated and thorough system to better protect institutions and their communities.

TRENDING AREA THREE: THE OPIOID EPIDEMIC

In 2017, FinCEN gave New York State Police an award for identifying over 100 individuals involved in a large illegal operation after a single financial institution reported an unusual pattern of cash deposits. After funds were rapidly withdrawn from ATM locations across the U.S., the reporting bank indicated that it believed much of the cash was derived from the illegal sale of marijuana. Investigations led to the discovery of a huge amount of cash stored up from the sale of illegal opioids, and the single financial institution responsible for reporting its suspicions helped New York State Police make the discovery that busted this dangerous criminal group.

Some other recent instances of money laundering involve the illegal practices around distribution of legal drugs. This is arguably more difficult to detect than the distribution of unlawful drugs, even though unlawful drug sales present a challenge of often being cash-based. When someone has a license to prescribe opioids that are legal, but they abuse it by overprescribing or prescribing them unnecessarily, it can be much more difficult to distinguish a legal transaction from an illegal one.

In 2017, the operator of a pharmaceutical company was arrested for bribing doctors to prescribe legal opioids to their patients unnecessarily. The indictment also alleged that the company conspired to mislead and defraud health insurance providers who were reluctant to approve payment for the drug when it was prescribed for non-cancer patients.

In another case in 2017, a Las Vegas physician practicing in pain management was found guilty of conspiracy to distribute controlled substances, distribution of controlled substances, money laundering and structuring of money transactions, after prescribing large amounts of legal opioids for no legitimate medical purpose.

Because criminals are aware of CTR requirements, they have developed methods for introducing their illegal proceeds into the financial system. But what about a doctor who receives credits from insurance companies or deposits cash under the guise of cash co-payments?

Financial institutions should consider being even more sensitive to potential BSA/AML concerns if they operate in a geographic region that has been affected by opioids. As proven by some of the recent examples, even traditionally legal transactions can be involved in threat finance.

HOW TO BEST PROTECT YOUR INSTITUTION: THREE MODELS FOR TRANSACTION MONITORING SYSTEM GOVERNANCE

THE IMPORTANCE OF TRANSACTION MONITORING SYSTEMS

In order to effectively and correctly detect and report suspicious activity, financial institutions must ensure their transaction monitoring systems are working as intended. Sensing red flags in the way funds flow through different streams in the financial landscape is the easiest way to detect illegal operations.

Transaction monitoring systems help to accurately highlight unusual or potential suspicious activity and help management document and explain filtering criteria and thresholds, as well as how both are appropriate for the bank's risk appetite (per regulatory guidance expectations).

TRANSACTION MONITORING SYSTEM REVIEW AND GOVERNANCE

Because transaction monitoring systems are so critical to an institution's AML program, institutions must review and tune these systems to make sure they:

1. Validate all the required inputs (e.g., reconciliations)

2. Establish alert triggers (e.g., rules, parameters, thresholds, etc.) that relate back to specific identified risks

There are three testing level options Capco considers best practice in this area, depending on an institution's specific factors. There is an overlap between the different testing models, but each level is unique in its comprehensiveness, and stands alone as a full testing process.

Based on an institution's risk appetite and regulatory requirements, it can decide to test its systems at any level – the first level being the most basic review and the last being a true model validation. Capco has found that some institutions struggle to differentiate between a systems check (the first two levels) and a true validation (the last level), so we have outlined the three levels.

"*Sensing red flags in the way funds flow through different streams in the financial landscape is the easiest way to detect illegal operations.*"

LEVEL ONE
BSA/AML RULES REVIEW AND TUNING

The first level, a BSA/AML Rules Review and Tuning, is an analysis of the BSA/AML system settings, focused on rules with parameters and thresholds to determine effectiveness in detecting potentially suspicious activity. The main focal points of this type of review are:

- The configuration of the rules used to quantify customer risks and monitor for suspicious activity must be configured to the risks that you are trying to mitigate.
- The effectiveness of a BSA system can be compromised if the system is generating too few or too many alerts.
- Rule tuning is necessary to determine the level of suspicious activity or potentially suspicious activity detected using above and below the line testing.
- A review should focus on understanding where your BSA/AML risk is concentrated based on the AML risk assessment.

QUESTIONS TO GUIDE THE PROCESS

- When reviewing and evaluating the existing rules and associated thresholds, what certain criteria and parameters will you need to use as filters?
- How can you ensure effective and optimized application to eliminate redundancies and increase synergies between the different rules?
- If the system is used for OFAC, how often do you review threshold levels and test for system sensitivity?
- How and what do you document to guarantee the ability to explain the rationale behind existing rules and associated thresholds, filtering criteria and parameters in relation to your organization's risks?
- What alignment can you draw between existing rules and potential or confirmed suspicious activity?
- Do you raise or lower thresholds to test selected rules through above the line and below the line testing?
- How do you evaluate the adequacy of the existing rules?
- How often do you implement new, enhanced rules based off the results of internal and external testing?
- Do existing and new rules ensure effective and efficient monitoring based on your organization's BSA/AML risk profile, including transactions, products and services and geographies?
- When implementing new rules and associated thresholds do you document and explain the rationale behind the adoption, explaining why they are reflective of your organization's BSA/ AML risks?
- Once new rules have gone into effect, how soon after and with what degree of consistency do you review and evaluate reports on the rules' effectiveness?

LEVEL TWO
BSA RULES VALIDATION

The second level, BSA Rules Validation, focuses on data integrity controls, risk scoring analysis and testing, and suspicious activity analysis and rules. This leverages the reconciliation work already done and performs sample testing to ensure its adequacy; and it validates the rules, providing a reasonable assurance that the rules are functioning as designed and assisting the institution in meeting regulatory requirements.

QUESTIONS TO GUIDE THE PROCESS

The second level of testing builds on the first level. It therefore includes most aspects of the first level, and the guiding questions for a BSA/AML Rules Review and Tuning should also guide a BSA Rules Validation. In addition to the guiding questions listed above, in the second level, your institution should evaluate:

- How do you review data flow documentation to ensure a complete understanding of the source and sufficiency of transaction data imported from the core banking systems and manual sources into the BSA/AML application?
- Does your review validate data integrity and quality of data reconciliation tests that confirm that the BSA/AML solution is accurately and completely capturing relevant customer, transactions and other data elements?
- How often do you run reconciliation tests? What is the retesting structure?
- Are the system reconciliations in place sufficiently documenting data accuracy and completeness between the core banking systems and the BSA/ AML monitoring system?
- What is the clearing process for unprocessed items in the system?
- When testing alerts generated from the BSA/ AML solution is the sample pool sufficient to verify that alerts are generated based on the rules set within the solution?
- Do the reports the BSA/AML solution generates identify gaps in the system?

LEVEL THREE
BSA SYSTEM MODEL VALIDATION

The third level, BSA System Model Validation, is the most comprehensive and complex so you can be confident that your BSA/AML systems are performing as intended. A BSA System Model Validation puts the BSA/AML solution into a test environment for analysis, developing and running comprehensive scenario tests from the core banking applications through the BSA/AML solution to ensure your institution obtains the desired alert results.

The critical elements covered in a true Model Validation are:

- Is the BSA/AML application configured properly to deal with the BSA/AML risks inherent within your organization's environment?

- Is the data mapping complete?

- Is the BSA/AML application properly capturing all data being fed by the core systems and/or any other types of transactional systems within your organization's environment? Is the aggregation of transaction and account data occurring within the BSA/AML application (this covers both the number count of transactional items and the classification of the data between the core and the BSA/AML filter)?

- Is the system operating as intended, free of system defects?

- Are the BSA/AML rules and/or parameters set within the system generating the appropriate alerts?

- Is the BSA/AML system generating all the appropriate business and regulatory reports?

A best practice for System Model Validations is to perform them during the initial system setup/configuration or 6 –12 months after the system is up and running, and again annually or earlier, if there are substantial system changes or if new core systems have been installed, impacting the data flowing to the BSA/AML monitoring system.

THE PROCESS

Capco recommends working with an independent third party for a full model validation, as the outside analysis and recommendations could prove beneficial to an otherwise insular validation system. The steps in this process could include:

- Preparing a test strategy to clearly document the detailed test scope, approach for test planning, test execution and defect management process suitable to the test environment and test data available at your organization

- Detailing the input and output for model testing and test closure process

- Performing data migration testing to validate the flow of data from core systems to the BSA/AML system and analyze all types of transactional data

- Preparing test scenarios and test scripts for each BSA/AML rule or parameter, using both simulated and historical data, customer risk ratings, all utilized modules of the BSA/AML application and all system-produced reports

- Performing specific types of retesting

- Reviewing and analyzing findings

SOME QUESTIONS TO CONSIDER

- What is your organization's system used for (e.g., customer risk scoring, suspicious activity identification, CTR filings, 314a filings, and/or OFAC)?
- If used for suspicious activity, has the system been previously validated? If so, when?
- Are there any examiner comments in this area?
- Have the rule settings ever been reviewed?
- Are system parameters reviewed? If so, how often?
- Is there a process for reconciling data?
- Does your organization maintain a current data map for the interface between the core system and any other system and BSA system?
- What features should the validation cover (e.g., customer risk scoring, suspicious activity rules, CTR filings, 314a searches, and/or OFAC)?

CONCLUSION

With AML risks constantly shifting and developing, it is critical for institutions to ensure high-level safeguarding. Vigilant system governance is critical to supporting a robust and effective AML system, and defining a validation or review process is the only way to ensure your systems are capable of genuine monitoring against the most sophisticated money launders and financial threat.

OTHER BEST PRACTICES

In addition to performing proper systems testing, some best practices for institutions hoping to enhance their AML efforts include:

- Ensure your institution follows a formal change management process.
- Establish clear roles and separation of duties within your AML regime.
- Provide access to configuration settings only to those who need access, and limit systems access for others.
- Ensure participants at all levels not only understand their roles and access settings, but also know who to reach out to with questions.
- Define the IT power and long-term costs necessary to run your system and ensure the system will operate within these parameters.

“*With AML risks constantly shifting and developing, it is critical for institutions to ensure high-level safeguarding.*”

STRUCTURED LENDING
INNOVATION OPPORTUNITIES IN WEALTH MANAGEMENT

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Lending is how modern banking began. In the middle-ages, financiers and borrowers in Northern Italy gathered on benches to agree loans, hence the terms banking (from banco - the Italian for bench) and Lombard lending (from Lombardia – the name of the region). Centuries later, the traditional business of lending is enjoying a renaissance.

In this paper, we look at structured lending, its benefits, risks and innovation opportunities, including peer-to-peer.

> *"Structured lending, also known as tailored lending, allows banks to offer a distinctive and valuable service to high-net-worth clients."*

NOT EVERY BANK WILL LEND AGAINST A PICASSO

Structured lending is the practice of lending substantial sums to high-net-worth clients, tailoring the conditions of the loan to the customer's specific needs and using non-standard assets as collateral to secure the borrowing. For example, an entrepreneur holding large amounts of stock in a company may be borrowing $10 million - in several tranches - to finance a new venture, secured by existing holdings in a single-equity position.

Structured lending, also known as tailored lending, allows banks to offer a distinctive and valuable service to high-net-worth clients. Only some wealth managers demonstrate the flexibility required by clients in this space. Not all have the necessary capabilities to value and monitor exotic collateral, not all have the risk appetite for certain types of collateral and not all have the balance sheet capacity and capital ratio to execute a structured lending transaction.

For clients, structured lending offers an opportunity to make fuller use of their assets and to follow a wide variety of sophisticated investment strategies. Additionally, funds may be used to finance purchases of non-financial assets (i.e. not in bank's custody), such as companies, property, aviation or marine assets. The availability of lending is not an end in itself. Rather, it enables new transactions to be concluded, which are potentially lucrative for both the client and the bank.

STRUCTURED LENDING IN A NUTSHELL

- Large, tailored loans with non-standard features, e.g. tranches, interest structures or maturities
- Clients are HNW or UHNW individuals or corporations
- Loans start at $5million and range up to hundreds of millions, average loan $15 million
- Loans are collateralized by assets other than residential property or diversified stock portfolios
- Assets used as collateral are often illiquid, concentrated, exotic or complex, i.e. hard to value or sell
- In case of a default, the bank claims the collateral and may have recourse to clients' other assets or cash-flows to make good any shortfall
- Structures may be cross-border, with borrowing onshore and assets held offshore

NEW SOURCES OF REVENUE AND GROWTH FOR WEALTH MANAGERS

Structured lending is a strong revenue generator. Margins are high, often in excess of 200bps (compared to less than 100bps for mortgages and classic Lombard lending secured by diversified portfolios). On the most exotic collateral, margins exceed 700 bps. Combined with the large loan sizes, this can quickly add up to a significant interest income stream. On top come the additional revenues from the use of funds – transaction fees, commissions and other income. Reinvestment of loan proceeds typically yields 80-100 bps of gross revenues to a wealth manager.

Clients with complex loans and niche collateral are 'stickier' and less likely to leave. Clients appreciate the added-value of a structured loan and are less inclined to transfer-out their portfolio if it is pledged to guarantee a loan. They can put their assets to work rather than simply having them sit in safe-keeping.

Lending is a powerful differentiator and driver of assets under management (AUM). As mentioned earlier, not all competitor institutions offer lending on non-standard collateral, particularly if it is exotic, or offer highly customized structures and comparable terms such as lending value. Existing clients may be persuaded to bring additional assets to the bank if the bank is prepared to lend against them, while new clients may be attracted by differentiated lending capabilities.

Several of the larger wealth managers, including UBS, Credit Suisse, Morgan Stanley and Bank of America, have reported strong growth in loans, including those secured with non-traditional collateral. For example, UBS's 2018 annual results show a 29 percent year-on-year rise in loans secured by guarantees and other collateral.[1] According to Barron's, Bank of America's finance chief said that structured lending helped drive third-quarter results in the company's wealth unit in 2017.[2]

This growth is coming in part from an ever-wider range of assets being accepted as collateral. Recently, assets such as private equity funds, hedge funds or unlisted equity positions have become accepted on a routine basis. This reflects banks' increasing sophistication to manage these assets with a corresponding balance of risk appetite and revenue potential.

Structured lending offers an opportunity to satisfy client needs, generate significant revenues and grow AUM with relatively well-understood risks. Big institutions can leverage their in-house specialist capabilities and balance sheets to absorb the risks, whilst boutiques can competitively take risks in their niche capabilities or use partners for expertise and risk transfer. We will cover risks in more detail later in the paper.

There is additional revenue potential for larger firms with advanced capabilities to value and monitor collateral (e.g. through an in-house investment bank or specialist function). These firms may take on the lead-arranger role in syndicated financing models, where the size of the loan exceeds the risk appetite or balance sheet capacity of the lead institution.

[1] UBS
[2] Barron's, 2017

TYPICAL PURPOSES OF A STRUCTURED LENDING LOAN

Proceeds invested into financial assets are held in safekeeping by the bank, contributing to the overall collateralization of the loan.

- Reinvestment, leveraging an existing portfolio, growing a portfolio without selling assets
- Enhancing risk diversification by reinvesting, hedging a strategic holding, financing liquidity needs

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Assets are not in the bank's safekeeping, and unless specific pledges are made, beyond recourse in case of a default.

- Financing non-financial asset purchases such as companies, real estate, marine or aviation assets
- Financing M&A activity or investment into a business or segregating personal wealth from that of the business

> *"With new sources of revenue and increased AUM, come costs, efforts and risks which must be understood and considered carefully before starting or growing this business."*

WHAT'S THE CATCH?

With new sources of revenue and increased AUM, come costs, efforts and risks which must be understood and considered carefully before starting or growing this business.

As a bespoke and non-standard product, tailored lending requires sophisticated capabilities to structure, originate and manage the loan through the entire lifecycle. In addition, relationship managers must understand the product very well to effectively identify opportunities in client portfolios and to promote and sell these products.

The ability to value collateral is crucial for engaging in this business. Assessing the value, volatility and liquidity of collateral is vital in deciding how much to lend against it. Too conservative an approach - as is often the case - will result in uncompetitive lending values and pricing and potentially lose business. Banks without an in-house evaluation capability can seek advice or services from specialized third-parties (e.g. real estate boutiques or investment banks).

Banks must have the appetite to take on the risk of the collateral. Both the type of collateral (e.g. real estate, private equity, illiquid or volatile stock) and the size of exposure must be within the bank's risk framework and appetite. Loans of tens or hundreds of millions may have significant effect on the exposure and balance sheet capacity of smaller, boutique players. As with evaluating collateral, third-parties can be used to syndicate exposures or to transfer risk to institutions better placed to manage it.

A holistic assessment of the client portfolio is necessary for the full economic benefit of structured lending. Lending is an enabler which allows to execute additional transactions and generate ancillary revenues. It may be beneficial to lend at low profit, if the loan will let a client enter other, more profitable transactions such as reinvestment, hedge, M&A activity or IPO. A disconnected view of departmental revenues or lack of an effective approval body can become an obstacle to providing the right overall service to the customer.

Finally, these transactions require specialist input from many areas such as legal, risk, investment bank and wealth managers. This should also include non-standard operations and risk management during the deal lifetime. To facilitate, banks need to have established and effective collaboration between departments.


FINE
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TYPES OF COLLATERAL ACCEPTED IN STRUCTURED LENDING (NON-EXHAUSTIVE)

COMMONLY ACCEPTED	OCCASIONALLY ACCEPTED (margins can be over 600 bps, LTV 10-50%)	ACCEPTED BY SOME INSTITUTIONS / WILL BE ACCEPTED IN NEAR FUTURE
• Single-stock positions • Marketable securities • Fixed income-backed loans • Hedge fund positions • Bridge loans • Syndicated loans	• Life insurance • Cash flow based lending • Unlisted equity • Equity derivatives and interest rate hedging • Commercial real estate (typically as part of a syndicate with other banks) • Precious metals	• Pre-IPO and take-private financing • Leveraged buyouts, M&A related financing • Real estate, including premium recreational or investment trusts • Unsecured credits • Fine art • Aircraft and marine assets • Intellectual property (e.g. royalties on a song or film) • Digital assets, cryptocurrencies

HOW IT WORKS

IDENTIFY → ORIGINATE → STRUCTURE → PRE-APPROVE → NEGOTIATE & APPROVE → EXECUTE → MONITOR

IDENTIFY

Relationship managers seek opportunities by identifying suitable collateral in clients' portfolios as well as assets held externally and matching these with needs for liquidity and opportunities for investment.

Key to success is a comprehensive understanding of the client's overall position, financing needs and investment goals in order to identify suitable collateral and suggest best uses for funds, and to then convey this to the client with a compelling narrative. Furthermore, relationship managers need to be well trained on the product, firstly to know where and how to look for possible collateral, and secondly to be able to explain the benefits and risks of the structured loan.

ORIGINATE

Lending specialists are involved to shape the transaction and make preliminary assessment of suitability and feasibility. Alternative terms or structures may be considered at this stage. Lending values are assigned to assets, depending on perceived volatility, liquidity and complexity.

Key to success is the availability of dedicated product experts with informed views of which structures may or may not be effective.

HOW IT WORKS CONTINUED

STRUCTURE

Market and product specialists perform valuation and risk analysis on the collateral. The specialists could be the in-house investment bank of a large institution or a third-party investment bank or assessor in the case of specialist assets (e.g. commercial real estate or fine art). Counsel is frequently necessary to provide a solid legal underpinning with pledges on the assets and recourse to the beneficial owner in case of shortfall. Robust and often bespoke legal agreements for covenants and pledges may be put in place at this stage.

Key to success is a rigorous process and a checklist to ensure all relevant aspects are considered. Access to an investment bank with expertise and existing books and positions in specific stocks is an advantage when considering single-stock or unlisted equity collateral.

PRE-APPROVE

This step is a preliminary approval in principle.

Key to success is a holistic view of the transaction and the impact on the bank's revenue, risks and risk-weighted assets/balance sheet. A pragmatic approach is useful to encourage transaction flow, but a rigorous identification of red-flags is essential, to avoid wasting effort on unsuitable cases and ultimately prevent losses.

NEGOTIATE AND APPROVE

Final structuring details, terms and pricing are agreed with the client and any third-party providers. The transaction is approved by a risk/lending committee.

Key to success is a quick turnaround and the existence of the pre-approval step. Comprehensive research on the collateral and necessary legal structures together with a standardized and widely-understood approval process will facilitate the thorough understanding of risks (and opportunities) by the risk committee and avoid delays in the process.

EXECUTE

The financing, investment and hedging transactions are all executed, possibly requiring precise synchronization. Multi-part transactions should be captured in such a way as to allow the holistic analysis and reporting of the entire structure. Where risks are transferred to third-parties or multiple jurisdictions are involved, banks will need to manage the additional complexity.

Keys to success include flexible deal processing systems able to capture and evaluate complex, multi-leg transactions and capabilities to manage unusual asset classes.

MONITOR

The final stage involves valuation and monitoring of the collateral, resulting positions and risks, and reporting to the client. This also includes computing and collecting margin calls, and any eventual escalations and liquidations if necessary.

Keys to success include risk systems able to provide effective valuations, particularly in times of stress. A solid process and an approach to liquidation prepared ahead of time (in normal conditions) are invaluable if positions must be sold under stress or time pressure. Rigorous legal documentation is essential to underpin recourse and recovery of value from beneficial owners.

WHAT ARE THE RISKS AND HOW TO MITIGATE THEM

CREDIT RISK

Credit risk on the borrower is limited in structured lending, thanks to the pledge of assets as collateral. Nevertheless, some residual credit exposure remains in the case of collateral shortfall (e.g. sudden sharp fall in the assets value).

To mitigate credit risk, banks need thorough understanding of the client and the purpose / business case of the loan, together with recourse to income streams or pledges of the assets. If the loan is for reinvestment within the bank, then recourse to other wealth and liquidity positions of the borrower can compensate shortfall.

MARKET RISK

Fluctuations in the value of collateral and its ability to be converted into cash are the largest risks in structured lending. These risks are exacerbated due to infrequent valuations of illiquid, hard-to-value and sell assets. In addition, market liquidity is a significant factor. It may take months or years to dispose of collateral such as unlisted or private equity, companies, physical assets or digital/crypto assets.

To mitigate market risk, it is important to put in place effective and robust collateral management. This should ensure diversification of collateral (types) across the portfolio and appropriate limits / exposures, in line with the firm's risk appetite. To achieve this from the operational standpoint, firms need to revalue collateral frequently and rigorously enforce margin calls/top-ups.

Large groups with investment banks or specialized boutiques have the advantage in valuing collateral and managing it together with existing portfolio positions. In cases where the capability to measure the risk does not exist in-house, third-parties may provide valuations. However, it may be a challenge to achieve this quickly, especially in turbulent market conditions. Finally, risks that are not within a firm's appetite may be completely or partially transferred to third-parties to manage. Some lenders are actively seeking to sell parts of their larger existing loans to other banks in order to adapt their exposures to reduced risk appetite.

OPERATIONAL RISK

The complex, bespoke nature of structured lending transactions and the diverse assets used as collateral lead to higher operational risks. Processes are often manual, non-standard, infrequent and not governed by established systems, and as such prone to human error.

To mitigate operational risks, good operational discipline and processes are required, as well as close collaboration between departments and business units. This is particularly relevant for sales, operations and risk management departments, all of which should have the same view of the transaction and collateral properties at all times. Standardized and documented recurring processes help eliminate human error in operations such as principal repayments, complex interest payment or rollovers of the structure. Finally, thorough supervision, controls and alerts help identify and rectify operational issues.

LEGAL RISKS

Structured loans and collateral may require a very specific legal structure to achieve their goals. This is often only tested in cases of a default, with severe consequences if contracts and recourse are not enforceable as intended. For example, EFG, a Swiss private bank, recently lost a court case resulting in the obligation to return nearly $200 million of collateral.[3]

Legal risks can only be mitigated by thorough due diligence and evaluation to ensure that (possibly multi-jurisdiction) pledge agreements are valid and have appropriate recourse. Previous experience in the asset class or jurisdiction is often invaluable in those cases.

[3] Reuters, 2018

INNOVATION OPPORTUNITIES

We have observed a number of innovative advances amongst leaders in structured lending. These represent opportunities for banks who are developing or starting out in this space.

DRIVING GROWTH THROUGH THE RELATIONSHIP MANAGER AWARENESS OF POSSIBILITIES

Educating relationship managers is important to heighten their awareness of products and recent developments in structured lending. This enables advisors to proactively identify suitable assets to be used as collateral and recommend attractive strategies and structures to clients. Institutions should be systematically scanning portfolios to identify eligible positions to lend against (e.g. eligible single-stocks or concentrated positions). RMs should develop a holistic view of clients' assets, particularly those not in the bank's custody (such as real estate, private equity funds or unlisted equity), and initiate financing discussions.

PROVIDING TECH-ENABLED EXPERIENCE

Technology to simulate transactions, including options for both financing and investment, can support the sales process by giving clear, flexible and customizable views of the transactions and the resulting impacts on portfolio composition, performance and risk. This improves experience and engagement for both the customer and the relationship manager.

IMPLEMENTING AGILE PROCESSES

The approval process needs to be robust but flexible and as straight-forward as possible. A two-stage approach is often helpful. Stage one involves cross-functional pre-approval committee's confirmation that collateral, loan terms and indicative financials are within the capabilities and appetite of the group. This is followed by detailed structuring of the transaction, negotiation with the client and final approval. The availability of lending product specialists to support relationship managers will expedite the process.

USING THIRD-PARTIES FOR RISK TRANSFER AND EXPERTISE

External providers can be used to take on risks that are not within the appetite or expertise of the bank. This is particularly helpful for smaller institutions who may use external advisors to assess newer and more exotic forms of collateral.

ADOPTING COMPETITIVE PRICING AND LOAN-TO-VALUE METRICS

Less conservative approach to structured lending products does not endorse excessive risk-taking, but rather provides more realistic and competitive evaluation of collateral. Banks should also create fast-track processes and streamlined approvals for lower-value and more standard transactions.

ACCEPTING A WIDER RANGE OF COLLATERAL TYPES

Recent additions to structured lending programs have included private equity, unlisted equity and commercial real estate. In the future, more banks could also consider accepting marine and aviation assets, art, life insurance, not to mention the rapidly growing asset class of cryptocurrency and other digital assets such as ICO tokens. An increased range of collateral provides a closer fit to clients' needs as well as strong differentiation from the competition.

PEER-TO-PEER AS AN OPPORTUNITY FOR GROWTH AND BALANCE SHEET OPTIMIZATION

The following three factors restrict a bank's ambition to launch or grow a structured lending offering:

1. **Capability** to value and manage the assets taken on as collateral

2. **Appetite** to take on board the required type and volume of risk

3. **Capacity** of balance sheet to absorb large loan positions

Loans and the collateral contribute to the bank's risk-weighted assets. This may consume capital which is both costly and limited. Even if the bank has the ability and risk appetite, it may still be limited by the capacity of its balance sheet.

To overcome these limitation, some institutions are investigating peer-to-peer business models. Here, both the lender (investor) and the borrower are clients of the bank. The collateral to secure the loan is held in custody by the bank, which evaluates, monitors and liquidates it if necessary. The bank takes on the role of the lead-arranger (broker), matching borrowers and investors within its client base. It also acts as administrator and safe-keeper of collateral and provider of collateral and risk management services and expertise.

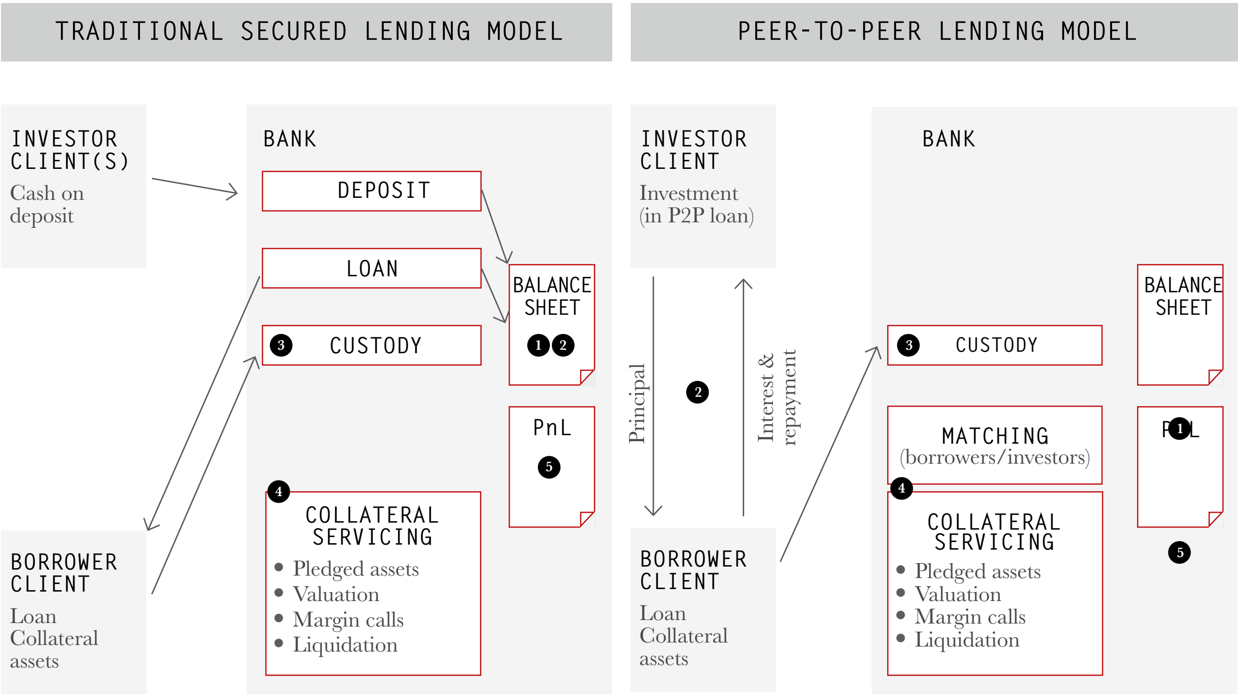
The bank has the **capability** to facilitate a structured lending loan, for which it charges a fee. The investor takes on the risk of the collateral. It is this client's risk **appetite** that drives the deal rather than the bank's. And in this setup, the investor client is at risk of losses or collateral shortfalls, so the loan can be isolated from the bank's balance sheet. This allows to overcome the **capacity** limitations.

In addition, when the cash being loaned comes from the investor-client's funds held on account (a liability for the bank), its use to fund a loan for the borrower removes it from the bank's balance sheet, reducing the bank's capital needs.

Further opportunities in peer-to-peer scenarios include a wide range of collateral acceptable by investor-clients - potentially wider than that of a regulated bank. This provides a new low-risk asset class for investor-clients, as an alternative to low-yielding cash deposits.

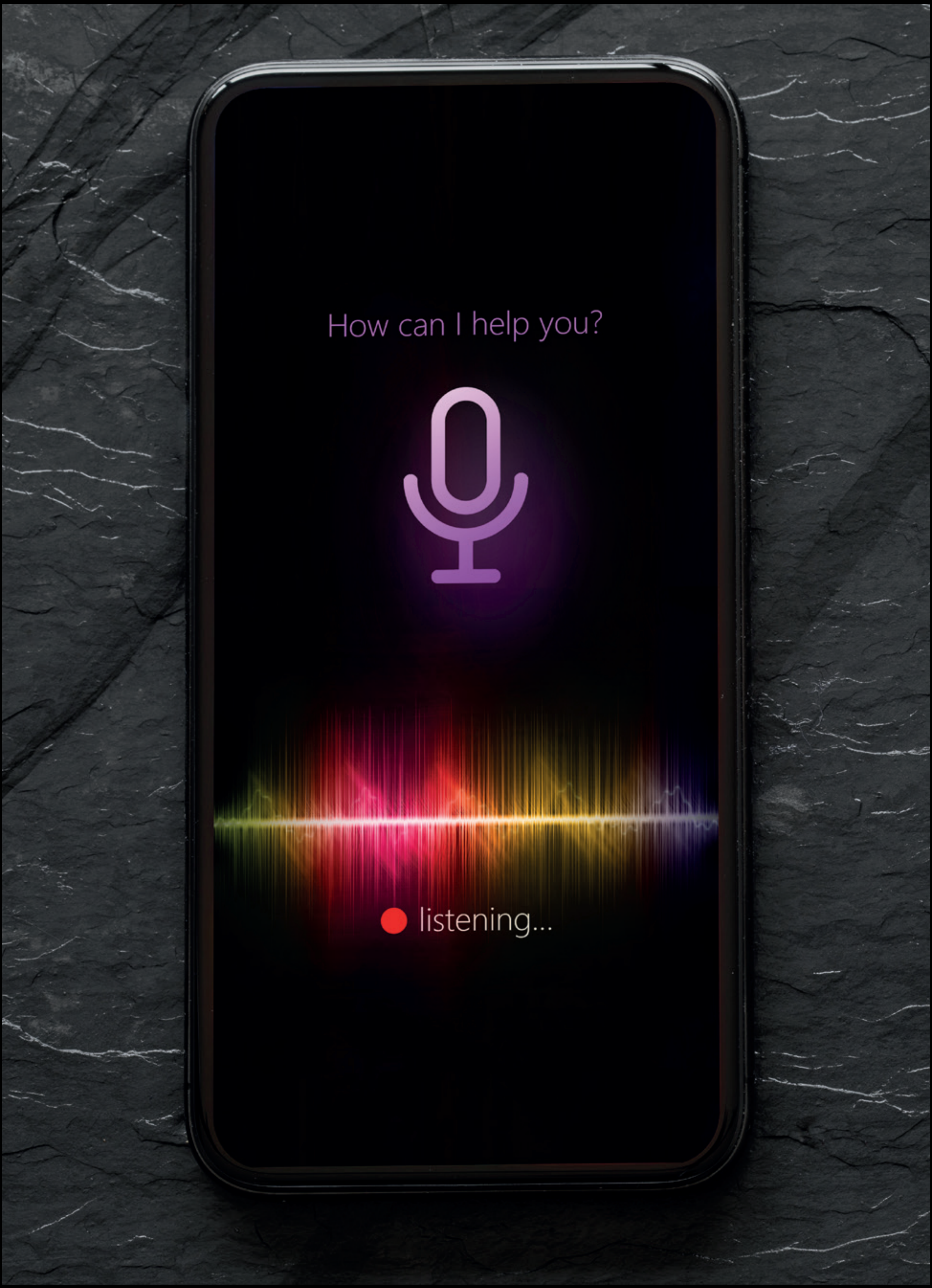
The first peer-to-peer offerings have started to appear in the wealth management arena and are certain to continue evolving. Capco has experience across the multiple business units and disciplines involved in structured lending programs. We can help clients evaluate the business case and implement the necessary processes and technology solutions. We believe that with innovative business models and peer-to-peer features, the centuries-old business of lending has entered a new era of profitability and growth.

PEER-TO-PEER AS AN OPPORTUNITY FOR GROWTH AND BALANCE SHEET OPTIMIZATION CONTINUED



1. Deposit impacts balance sheet
2. Loan impacts balance sheet
3. Collateral held in custody
4. Bank provides custody collateral services
5. Bank earns interest

1. No impact on balance sheet
2. Borrower and investor transact directly
3. Collateral held in custody
4. Bank matches clients, arranges deals and provides custody collateral services
5. Bank earns fees


How can I help you?
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ACCESSIBILITY: BANKING FOR THE 21ST CENTURY

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October 2018

SUMMARY

Globally, 15 percent of the population live with some form of disability[1]. Improving accessibility for these individuals creates a significant opportunity for banks that could add over $24 billion* to annual revenue.

Understanding differences in the disability profile between countries can help achieve a sustainable accessibility strategy of greatest benefit for the greatest number of people, and therefore greatest return on investment for any technology spend. Brazil, for example, has a high proportion of disabled people with visual impairment[2]. Improving digital accessibility for these individuals could capture 78 percent of the potential accessibility revenue in this country. This amounts to over $847 million* in annual revenue, with an improvement in the lives of over 38 million people.

Quality of Life Technology (QoLT) is a catch-all term for assistive technology that is aimed at improving accessibility to transform the lives of disabled individuals. There has never been a better time to incorporate QoLT into retail banking. In part, this is due to the movement away from physical branches towards digital banking, but also because it has never been easier or more cost effective to make banking accessible.

Many digital innovations streamline user journeys for all customers whilst simultaneously providing accessibility solutions for those with impairments. For instance, virtual banking assistants that respond to voice or text commands can be used to access traditional banking services. Such innovations are the result of a cultural shift towards digital banking combined with advancements in digital technology, including natural language processing (NLP) and machine learning (ML). In addition to increased revenue, further benefits that can be gained from accessible banking include: the opportunity to demonstrate social responsibility and enhance company reputation, improved compliance with legal mandates to provide equal access and opportunity for disabled people, staying ahead of the competition (particularly in regard to tech companies able to utilize their digital expertise to meet the needs of this market), and driving economic growth by reducing the number of unbanked individuals globally.

Despite these benefits however, accessibility remains an emerging area of focus and investment for banks driven historically by regulatory requirements rather than tangible monetary benefits. Importantly, technology now exists allowing banks to create tailored accessibility solutions for their customers, based on individual need, improving access for not only digital banking but also telephone, ATM and in-branch experiences.

Furthermore, with the use of technology such as machine learning to identify early signs of disease, banks could now begin to actively participate in reducing the incidence of disability worldwide.

* Source: Capco research
Revenue calculations are based on 32% of people with a disability being excluded from digital banking and on retail banks making £58 less in annual revenue (per customer) on non-digital customer accounts

"Understanding differences in the disability profile between countries can help achieve a sustainable accessibility strategy of greatest benefit for the greatest number of people, and therefore greatest return on investment for any technology spend."

UNDERSTANDING DISABILITY IN THE CONTEXT OF BANKING

It is estimated that currently 15 percent of the global population (approximately 1 billion people)[1] live with some form of disability. Many banks struggle to serve this population, particularly in developing countries and remote locations. This is largely due to a lack of understanding of the needs of disabled customers, but also to a lack of awareness of recent technological innovations that could be implemented to provide these customers with assistance. There is also a lack of awareness among banks of the scale of revenue loss from disabled customers who are unable to access typical banking channels, products and features.

By definition, a disability causes substantial and long-term negative effects on a person's ability to carry out normal day-to-day activities[3]. This means that simple tasks such as reading instructions on a screen, using a PIN for verification, or speaking on the phone may be impossible for millions of people worldwide. For others, milder impairments can cause difficulties and frustrations with these seemingly necessary tasks, disincentivizing customers to conduct banking activities altogether.

Understanding the different types of disabilities and the challenges they may bring to customers allows banks to build strategies around inclusion and enablement. Difficulties that people with disabilities may experience broadly fall into five categories:

- Visual impairments
- Hearing impairments
- Physical impairments
- Cognitive impairments (e.g. caused by brain injury)
- Word/number impairments (e.g. illiteracy, dyslexia)

These categories are listed here only to provide a broad introduction to the difficulties that people with disabilities may experience. It is important to be aware that each person is an individual with their own unique set of challenges, regardless of the type of disability they may have.

Digital accessibility is becoming increasingly important due to the move away from traditional physical banks. As a consequence of this culture shift, the cost-effectiveness and ease of implementation for improvements in accessibility have been substantially increased in recent years. It is estimated that improving accessibility for digital banking alone would result in an additional $24.1 billion* in annual global banking revenue. Further analysis shows that 29 percent of this global figure could be generated by improving digital accessibility for only the visually impaired[4]. Such improvements would also generate additional revenue by allowing illiterate individuals (of which there are 750 million worldwide[5]) improved access to digital banking.

Understanding how the disability landscape varies between countries is important for banks to consider. Some countries have a high proportion of disabled people with visual impairment – Brazil is one such example. Investing in improved access to digital banking for visually impaired people in Brazil could capture 78 percent of potential accessibility revenue in this country[6] (equating to approximately $847 million* annually) and improve the lives of over 38 million people. In comparison, such improvements may only capture 18 percent of this revenue in the UK[7].

* Source: Capco research
Revenue calculations are based on 32% of people with a disability being excluded from digital banking and on retail banks making £58 less in annual revenue (per customer) on non-digital customer accounts

INDUSTRY INSIGHTS - BANKING ACCESSIBILITY NOW

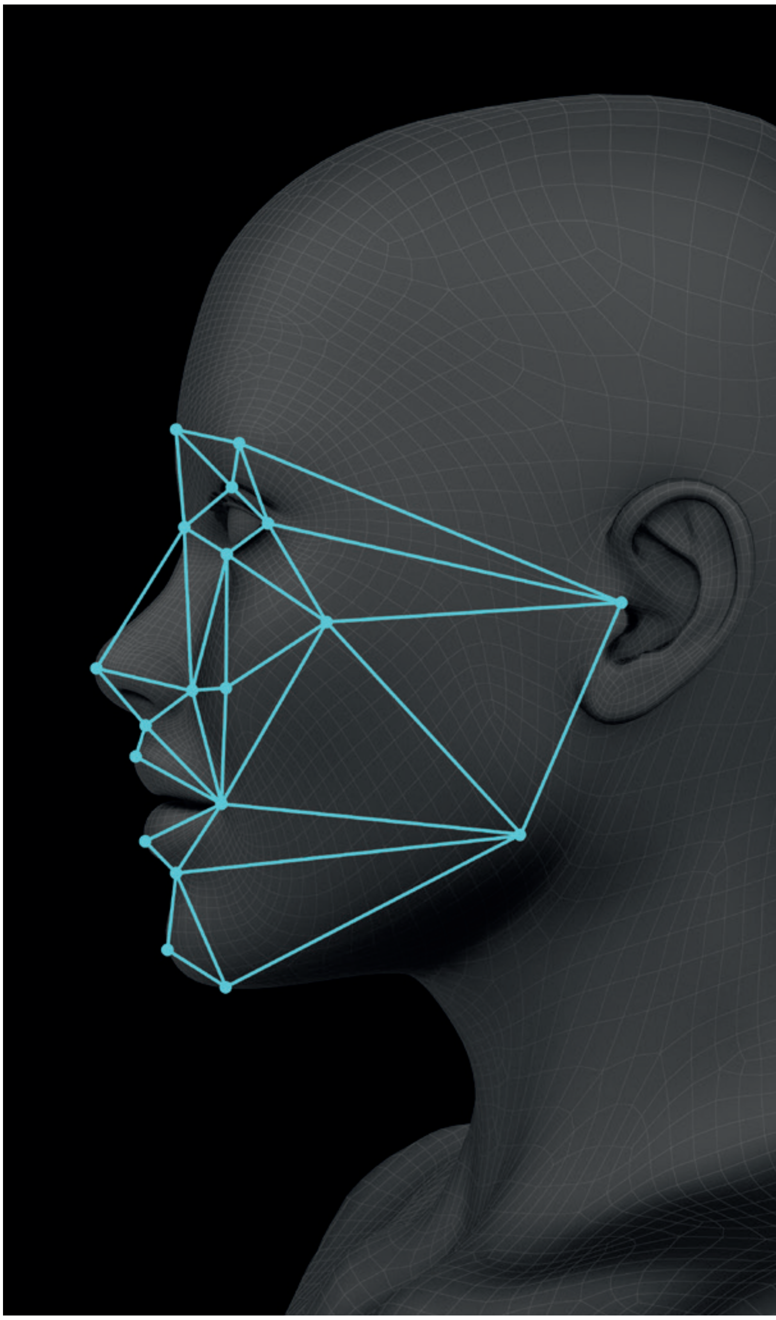
It has never been easier or more cost effective to make banking accessible. An increasing number of banks are waking up to this - and are developing strategies and implementing solutions to improve accessibility for their disabled customers. However, this still remains an emerging area of focus and investment.

Recently, ATM accessibility has been dramatically improved for visually impaired (and illiterate) customers following the installation of 'talking' ATMs, which provide audio guidance through the users' own headphones. In the UK, this technology is now present in around 90 percent of Barclay's ATMs[8]. For hearing impaired customers, partnerships with sign-language relay services have improved in-branch and telephone banking accessibility. At Barclays, customers are able to communicate live with a customer service advisor through a remotely located on-screen translator[9]. In 2018, Emirates NBD moved a step beyond this by trialing a real-time AI-powered sign-language translation service for hearing impaired customers, removing the need for a human intermediary[10].

An alternative approach to accessible banking is to implement innovations which streamline user journeys for all customers, and through this process provide accessibility solutions for those with impairments. For example, virtual assistant technologies can be used by all customers for fast and efficient access to traditional baking services, including checking balances and making payments.

The ability to interact with these assistants through voice command improves accessibility for almost all disabilities, and in particular, people with visual and physical impairments, and people who have difficulty reading. With the option to interact via text input/output, an equal level of accessibility is provided for hearing impaired customers. For the United Services Automobile Association (USAA), implementing this technology has taken the form of a partnership with Amazon's Alexa[11], whereas the Bank of America have developed Erica, their own virtual banking assistant[12].

Another example of improving user journeys for all customers that also enhances accessibility is through the implementation of biometric authentication. These systems can eliminate the need for customers to recall and input passwords and PINs. For example, customers of Barclays[13], HSBC[14] and Citi[15] banks can opt to use voice recognition technology when telephone banking. Some banks have also begun to implement biometric authentication technology at ATMs – for example, Bradesco have installed vein-pattern recognition technology[16]. These changes can improve accessibility for customers who are visually impaired, physically impaired, those who have difficulty reading and those with cognitive impairments.

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CREATING ACCESSIBLE BANKING TODAY

In addition to the estimated additional $24.1 billion* yearly global banking revenue generated by improving accessibility for digital banking, there are a number of further benefits to be gained from accessible banking:

Social responsibility and reputation – accessible banking demonstrates social responsibility. Social responsibility is becoming increasingly important to customers, with a recent survey suggesting 87 percent of people would purchase a product because a company advocated for an issue they cared about, and 89 percent of people saying they would switch brands to one associated with a good cause[17].

Compliance – banking must be as accessible to as many people as possible in order to provide equal access and opportunity for disabled people.

Staying ahead – competition from challenger banks and emerging tech companies means that banks which do not provide accessible banking solutions will fall behind companies that are able to recognize this financial potential and meet the needs of this market.

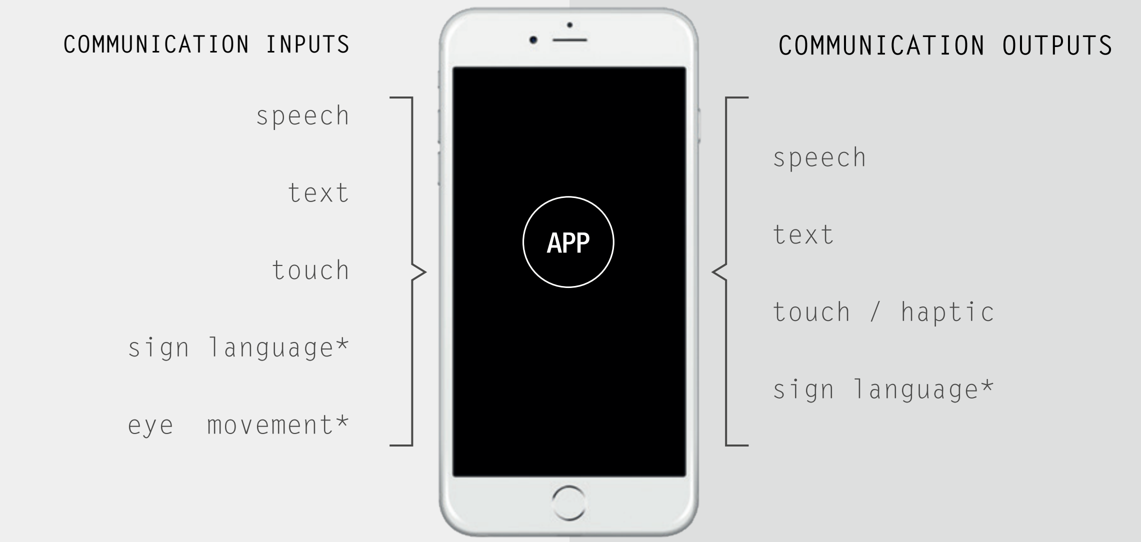
Economic growth – accessible banking will reduce the number of unbanked individuals, increasing the number of people able to access financial products and savings accounts, strengthening and driving economic growth.

On the road to creating accessible banking are several pitfalls that may impact existing business processes and customer satisfaction, and thus require enhanced focus from all stakeholders involved (see table for details).

	PROBLEM	FIX
TYPICAL CUSTOMERS	Increased accessibility may result in complicated and prolonged user journeys, negatively impacting the typical customer experience.	Ensuring that users are directed through the most suitable journey based on their individual requirements is crucial. This can be achieved through qualification criteria (at the start of journey), intuitive UX design, or an alternative app entirely.
SECURITY	Increasing accessibility draws on a different set of security considerations and potential vulnerabilities that need to be addressed.	Security considerations must be at the heart of any new app build or iteration. It must be ensured that all development utilizes the latest security features.
INITIAL INVESTMENT	Extra features create additional potential points of failure – the more complex a system, the greater its susceptibility to faults.	Using a combination of existing proven technologies and microservice architecture will mitigate the risk of potential failures. Providing sufficient time for testing and learning from previous experience is crucial for successful operation.
TRAINING	Any new application requires a period of understanding the new ‘norm’. For some accessibility technologies users may require training.	A laser focus on UX design and strong understanding of customer needs allows for any new app build to be intuitive and effective from day one. For potentially complex parts of a user journey, consideration should be made into training to the new ‘norm’.

* Source: Capco research
Revenue calculations are based on 32% of people with a disability being excluded from digital banking and on retail banks making £58 less in annual revenue (per customer) on non-digital customer accounts

OUR VISION FOR FUTURE ACCESSIBILITY



* not currently incorporated into banking apps

Technological advancements, in combination with a culture shift towards digital banking, are paving the way for accessibility in the industry. Various third-party vendors have developed a range of assistive technologies – such as Natural Language Processing (NLP), Optical Character Recognition (OCR), and Machine Learning (ML) – to implement solutions that allow users to interact with interfaces through their preferred method of communication. This not only includes the more traditional channels of text, touch and speech, but also eye-control and sign language. These technologies can be leveraged by banks to improve the accessibility of digital banking and also telephone and in-branch interactions between disabled customers and staff.

The key to any successful digital implementation is a deep understanding of the current process and a well-defined customer user journey. Detailing the key accessibility 'pain points', from the perspective of a disabled individual, is essential to ensuring correct technologies are brought in at the right point and seamlessly integrated without frustration of the existing process.

We feel that individualized virtual assistant banking apps in particular have the power to revolutionize the banking experience for people with disabilities. At present, these apps only allow users to interact through text, touch and speech. However, technology has now advanced to the point that apps with the capacity to communicate through a user's chosen channel/s could be created (including sign language or eye-movement). Apps would be able to learn the specific needs of each user and create a tailored banking experience for each individual.

Such virtual assistant apps could additionally provide additional support with physical banking (e.g. ATM and in-branch transactions) by syncing with a user's phone camera and headphones to offer individualized real-time voice narration for visually impaired and illiterate customers. The app could use biometric voice authentication technology and interact with ATMs through contactless readers, further enhancing accessibility by reducing the number of physical interactions required for all customers.

Improving accessibility across the customer base of a bank will lead to the wider use and greater adoption of QoLT and associated hardware (i.e. smartphone assistive features) as the norm. In the near future, banks may be able to offer digital health screening to customers through their banking apps and seamlessly integrate this into the existing user-journey. In this way, banks would be able to assist with early diagnosis of diseases, targeting the root causes of some disabilities to delay or even prevent significant impairments.

For example, around 80 percent of the world's blind are avoidably so[18]. Identifying eye diseases, such as glaucoma, in the early stages can help prevent significant vision loss[19]. Smartphone apps that aim to assist with this have already been developed[20]. Apps aiming to assist with early diagnosis of many other conditions also already exist, including hearing loss[21], cancer[22], and heart rhythm irregularities that if left untreated could lead to stroke[23]. Incorporating health screening software into banking apps could not only reduce the long-term loss of revenue that banks can incur as customers become increasingly impaired, but could also provide banks with a competitive edge and demonstrate significant corporate social responsibility.

Similarly, detecting early signs of dementia is currently a huge healthcare challenge, resulting in delayed access to treatment for many people. This is becoming an ever more important issue – the number of people with dementia worldwide is projected to triple to 152 million people[24] by 2050. With the rise of digital banking and machine learning technology, it is possible to identify subtle changes in a customer's usual behavior.

For example, customers experiencing early cognitive changes may have more difficulty than usual logging into accounts, perform repeated actions and requests, or begin to miss usual payments. Banks could offer an opt-in service to customers, where if their systems identified any potential concerns then customers would be signposted to their GP for assessment.

Further assistance could be provided to customers with dementia by offering an optional financial guardian system, where particular activities could be flagged to a nominated person. An example of this is large withdrawals or transactions. Such a service could help support people in the early stages of dementia (before a power of attorney has been appointed) to remain financially independent for longer and provide customers and their families with peace of mind. Voluntary financial guardianship services such as this may also be of benefit to people with an intellectual disability and people with certain mental health conditions.

Going forward, society should begin to consider a future where banks (and other large companies) have access to health data about their customers. This ranges from data obtained through customers informing the company themselves (e.g. to enable a tailored experience that meets their needs), to the potential scenario of customers making use of in-app health screening features offered by companies, and finally to health data obtained without the customer having explicitly taken part in a health assessment (e.g. the scenario of changes in consumer behavior due to dementia, outlined above). Of course, the ethical and practical implications of companies having access to personal health data requires discussion. It may, however, be possible for special branches of cryptography to be used to protect consumer data in these scenarios.

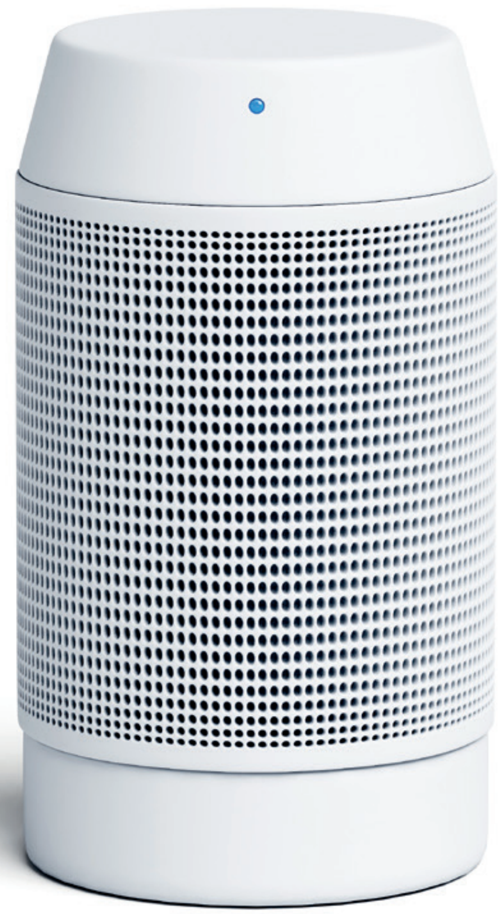
> *"Going forward, society should begin to consider a future where banks (and other large companies) have access to health data about their customers."*

WHAT'S NEXT?

With advances made in NLP, ML, OCR, and AI, it has never been easier to improve banking accessibility for an estimated one billion disabled people worldwide, whilst adding $24.1 billion to revenues. Some banks are trying to stay ahead of the curve and already offer more advanced technologies in day-to-day banking such as talking ATMs, AI-powered sign-language translation, virtual assistants, and biometric authentication. This is not the norm however, and there are still many opportunities waiting to be exploited for more widespread enhancements. In particular, accommodating for individualized banking experiences where customers can choose their preferred method of communication. In many cases inclusive design can help all customers.

Adopting the latest and best-in-class QoLT not only helps banks reach out to more customers (or new customer segments), they may also play an increasing role in healthcare, assisting with early diagnoses of potentially preventable diseases such as glaucoma. This type of offering can significantly influence the banks' corporate social responsibility efforts – promoting and improving the bank's image is just one of many intrinsic benefits.

Aside from reputation, financial incentives, or compliance with the law, we are certain that the widespread implementation of the latest accessibility technologies is imperative to staying ahead of competitors in an increasingly cut-throat financial landscape.



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ACCELERATING ENTRY INTO THE DIGITAL UNSECURED LENDING MARKET

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November 2018

DIGITAL UNSECURED LENDING: A QUICK DEFINITION

Digital unsecured lending refers to using online, digital platforms to originate unsecured loans directly to customers (typically consumers and small to medium-size enterprises). Online loan origination platforms automate some or all steps in the loan application process, including electronic data and document capture, automated underwriting and managing eSignatures. Advanced analytics models automate credit decisions for faster, more precise and targeted underwriting.

This automation can be delivered through a bank technology platform or sourced from a third-party vendor (residing on the bank's IT infrastructure or accessible from the cloud via a secure software-as-a-service offering). With any of these methods, automation provides the critical ability to deliver loans more efficiently while maintaining traditional underwriting, pricing and compliance practices.[1]

“*Digital unsecured lending refers to using online, digital platforms to originate unsecured loans directly to customers (typically consumers and small to medium-size enterprises).*”

[1] American Bankers Association, 2018, The State of Digital Lending

WHY DIGITAL UNSECURED LENDING?

Banks will not be able to grow in the long term and meet their customers' increasing expectations if they continue to rely on traditional processes and channels. Customers want the speed and ease of doing business with online retailers, fintechs and other new competitors eager to serve them.

Unsecured lending is a source of new business that many institutions have not exploited. Meanwhile, digital technology continues to make it more attractive for both the customer and the bank. Now is the time for traditional banks to enter the digital unsecured lending market or enhance their existing offerings to offer consumers personal, student and small business loans.

Unlike credit card products that don't make money until customers carry a balance, unsecured loans start generating revenue immediately. Interest charges begin on day one, as soon as a bank funds a new loan. Banks accelerate revenue generation by taking in deposits and lending money at higher interest rates over shorter payment windows.

In the past few years, the unsecured lending business has transformed into a fast-moving marketplace with strong and steady growth. Balances are rising and delinquencies are falling due to the strong economy, low unemployment and increasing use of big data in underwriting.

There are three key reasons why traditional lenders should act now:

1. UNSECURED LENDING IS A GROWTH OPPORTUNITY

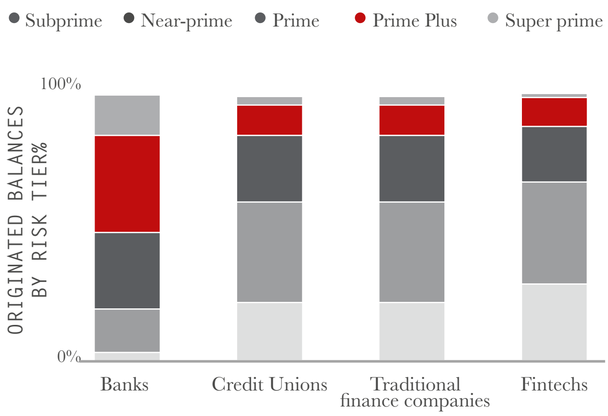
Most major banks and credit unions have not aggressively pursued unsecured lending beyond credit cards, missing out on significant growth in the past few years. There are now nearly three million more consumers with personal loans compared to two years ago, and the quality is improving: prime and above-prime originations increased by double-digit percentages between Q2 2016 and Q2 2017.[2]

2. THE RISE OF FINTECHS

Fintech lenders have become the largest originators of personal loans, capturing over 30 percent of the market share, up from three percent just five years ago.[3] These non-bank lenders are creating and meeting a significant new demand in areas not traditionally served by banks, focusing on non-standard credit profiles that expand the market for borrowers.

Fintechs are proving that financial institutions can use advanced data analytics and other digital tools to safely lend to near-prime and subprime borrowers. And consumers prefer fintechs for personal loans because of favorable terms, greater transparency, and faster approval and funding. Traditional lenders, with their antiquated policies and legacy systems, find it increasingly difficult to match the tailored, agile service of the new digital competition.

The experience of Goldman Sachs, however, shows the potential for traditional institutions in this market. In just two years, its Marcus online banking platform made $4 billion in unsecured loans and took in more than $20 billion in deposits.[4]



PERSONAL LOAN OBLIGATIONS BY LENDER TYPE (2016)

Subprime=300-600; Near-prime=601-660; Prime=661-720; Prime plus=721-780; Super prime=781-850

Source: TransUnion consumer credit database

[2] TransUnion, 2017, Q3 2017 TransUnion Industry Insights Report
[3] TransUnion Consumer Credit Database, 2017
[4] TechRepublic, 2018, DeNisco Rayome, Alison. How mobile, AI, and omnichannel tech will revolutionize the future of banking; CNN, 2018, Horowitz, Julia. Goldman Sachs is serious about becoming a bank for everyday people

3. OPPORTUNITY TO BUILD LASTING BUSINESS RELATIONSHIPS WITH DESIRABLE CUSTOMERS WHO PREFER DIGITAL PRODUCTS AND SERVICES

Millennials are an obvious target for digital unsecured lending. Bank customers typically form strong and long-lasting relationships with products and brands when they are aged between 25 and 30.[5] This is when consumers are beginning to advance professionally and amass wealth. Millennials are also small business owners and entrepreneurs, and unsecured lending is an entry to long-term business relationships. For traditional banks to form lifetime relationships with this generation of customers, they need to match the digital customer experience and offerings of fintechs and peer-to-peer (P2P) lenders.

SIGNIFICANT GROWTH AND OPPORTUNITY AWAIT BANKS ACROSS THE UNSECURED LENDING MARKET

THERE ARE NOW NEARLY *3,000,000* MORE CONSUMERS WITH PERSONAL LOANS COMPARED TO 2 YEARS AGO[6]

127,400,000 NEW CREDIT CARDS WILL BE OPENED IN 2020, GROWING BY *18%* FROM 2015[7]

U.S. CONSUMERS HOLD OVER *$3.7 trillion* OF NON-HOUSING DEBT[8]

CREDIT CARD BALANCES INCREASED BY *7.8%* TO *$714 billion* IN Q2 2017[9]

$107 billion THE TOTAL OUTSTANDING BALANCE OF PERSONAL LOANS. THE SIZE OF THE PERSONAL LOAN SECTOR HAS MORE THAN DOUBLED IN 5 YEARS[10]

[5] TNS, 2013, Direct Banks and the Future of Consumer Banking
[6] TransUnion, 2017, Q3 2017 TransUnion Industry Insights Report
[7] TransUnion, 2017, Consumer Credit Origination, Balance & Delinquency Trends: Q1 2017
[8] NCLC Digital Library – Fair Debt Collection, 2017
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[10] Federal Reserve – Changes in U.S. Family Finances, 2017

UNCOMMON INSIGHTS FROM THE FRONT LINES: HOW TO BUILD A DIGITAL UNSECURED LENDING BUSINESS

When creating and launching digital unsecured lending products, there are several important lessons to take into consideration to help accelerate every stage of the design, build, test and launch process, all the while controlling risks:

LESSON #1

Jump-start a winning position by partnering with fintechs.

Banks don't have to compete with fintechs, they can partner with them. With no or minimal upfront investment, banks can make the most of fintechs' modern, agile software and technology-driven product offerings to quickly go to market with their own digital lending solutions.

When entering into a relationship with a fintech, banks must apply sound risk management practices (as they are fully responsible for third-party vendor actions). Banks need to seek and evaluate fintech partnerships to quickly get up to speed and catch up with the market. Next, the bank should perform product due diligence to ensure that the fintech's technology will integrate with the bank's core systems, comply with legal and regulatory requirements, map to the bank's operational procedures and provide superior customer experience.

LESSON #2

Mitigate fraud risk with digital identity systems.

Despite progress in underwriting via data analytics and new kinds of data, unsecured lending remains exposed to fraud, especially via digital platforms. A critical step in identifying and addressing potential vulnerabilities is to change the bank's operating structure to ensure the credit risk and fraud teams are working collaboratively and not in silos.

To mitigate fraud risk across threat vectors, including online synthetic identity fraud, it is imperative to have a defensive strategy to detect and preemptively strike against malicious activities. Establish robust digital identity processes, sound data security and analytics practices, and a governance framework to manage, map, and safely share the right data with the credit risk and fraud teams. Mitigating the fraud risks during loan origination allows the credit risk team to focus on assessing the applicant's credit-worthiness.

As a proactive measure, create a playbook of 'what if' scenarios or breaches and lay out the corresponding protocols for each. By thinking through scenarios in advance, a bank can implement procedures, for instance, to quickly defeat a bot attack on its website or to clean up after a mail scam (by cancelling and reissuing direct-mail prequalification codes that have been compromised).

LESSON #3

Implement an end-to-end digital experience to improvecustomer satisfaction.

Many traditional banks offer some form of digital capability to support lending, such as loan status, loan payments and basic account information. However, most banks' core lending processes - including online application, onboarding processes, underwriting and funding - have yet to be overhauled through technology. This means there is much room for improvement in productivity, closing more loans and increasing revenue per loan. To achieve these improvements and to meet customers' expectations, cheaper, faster and automated services are required. Non-bank lenders are already benefiting, but the majority of traditional banks are not there yet. In fact, most banks can handle just seven percent of products digitally from end-to-end, having only digitalized fragments of the process for marketing, selling and servicing loans.[11]

[11] SAP Value Management Center-Bain Digital Lending Survey, 2015

LESSON #4

Use big data and predictive analytics to target the best borrowers.

Fintech and P2P lenders have made inroads into banking markets by harnessing advanced analytics and non-traditional data to automate and finetune underwriting processes. Using big data analytics increases the chances of getting better returns and enables more aggressive pricing, giving these upstarts a marketing edge against traditional banks while allowing them to maintain a less burdensome administrative process and provide the quick decisions borrowers have come to expect in the online environment.

Data strategies that provide insight on borrowers and loan performance will enable rapid decision making for banks and fintechs. The biggest advantage of big data and predictive analytics is enabling banks to set more precise borrowing terms and offer advantageous loan pricing to customers with low risk profiles. It also reduces the risk of taking on unreliable borrowers without setting appropriate terms.

LESSON #5

Cannibalization is not always a bad thing. Done properly it propels results.

Having a new product take sales away from an existing product may not seem like an attractive situation for a firm. Clorox, for example, saw sales of their bleach products suffer when they introduced laundry detergents with bleach as an added ingredient.[12] A new Starbucks franchise can cannibalize sales from another franchise nearby.

In financial services, many initiatives fail to make it to market because the benefit stream for the projects has already been allocated to other projects. This is referred to as cannibalization of business case benefits. To overcome this, banks must carefully manage the key performance indicators (KPIs) of their projects and think strategically about how to bundle enhancements to deliver the most value from their deployments. Sometimes it means working in differentiating elements that may not yield the highest hard dollar gains with practical business improvement measures.

For example, a bank may be unable to enhance its lending process through eSignature because in branch settings the benefits of reduced courier runs are already claimed and justified by deploying multifunction scanners to process loan collateral. The outcome for bankers and customers is not optimal - the hard cost savings are already realized, leaving the bank in a tougher position to justify the investment. Banks that find themselves in this situation should reframe the business case for eSignature by bundling it within sales and servicing enhancements, such as a customer relationship management (CRM) system deployment.

While cannibalization may seem very negative, truly innovative banks are willing to sacrifice or cannibalize their prior investments to defend themselves against the competition. Keeping with the eSignature example, if banks try to preserve the value of their investments in multifunction scanners, they risk being viewed as antiquated. Progressive firms explore and embrace cannibalization to remain ahead of the pack.

Capco works with banks to design digital lending systems that will provide exceptional experiences for customers and back office employees. By digitizing the loan origination and servicing journey, we help banks fundamentally change the business case and experience. The time- and labor-intensive manual processes are eliminated. Customers can apply online through a website or mobile app anytime, anywhere. In addition, our design ensures that the journey steps are intuitive, guiding the customer through the process, and allowing them to upload any supporting documents (such as tax returns) in the app. Employees of the bank no longer need to manage the multiple exchanges of paper documents, freeing their time for more meaningful activities. Digital lending caters to more automated and cost-efficient features such as auto payments, e-statements and online chats.

[12] Reference for Business

SEIZING THE DIGITAL UNSECURED LENDING OPPORTUNITY

For financial institutions that are newly established or traditional banks that have not yet gone digital, there is opportunity to capture market share with an unsecured lending offering.

By using new ways of thinking about customers, aligning modern architectural foundations with their needs, and deploying the latest methodologies and technologies, banks can quickly and flexibly deploy effective unsecured lending products.

> *"In 2018, the unsecured lending industry will trend toward a streamlined lending process, better interest rates and more transparent lending criteria. In fact, some brick-and-mortar banks are only recently returning to this kind of lending after the subprime mortgage crisis.[13]"*

AGILE CASE STUDY

Using an agile framework to accelerate delivery of a brand new digital personal loan product.

A large multinational bank wanted to quickly bring a new personal loan product to market, aimed at new and existing customers across the United States and delivered via a digital channel. Capco supported all elements of the product development including mapping the customer journey, financial modeling, operations design, testing, product marketing strategy, training and project management.

To foster success, Capco started by collaborating with over 25 stakeholder groups to identify, document, assess and finalize requirements for the development plan. During development, the project-management structure was enlarged and agile methods, such as multi-level scrums, were implemented in three-week long sprints for development and testing to keep the effort on track.

The overwhelming advantage of using the agile methodology over 'waterfall' in this case was speed. With this approach, the bank's objective for rapid contribution to the bottom line was met, taking the new product from conception to rollout in a short timeframe. Not only was the agile approach considerably faster than the waterfall method, it also gave the bank a system that was better tailored to their needs.

In addition, Capco helped navigate regulatory hurdles and supported multiple development teams, both internally and at third-party loan origination and processing vendors. The results were increased profitability, improved financial metrics and increased engagement across existing customers as well as attracting new customers.

[13] SAP Value Management Center-Bain Digital Lending Survey, 2015

PARTNERSHIPS CASE STUDY

Partnering with a fintech to expedite development of an end-to-end digital lending solution.

A large multinational bank wanted to offer an unsecured personal loan product via a new digital channel. Capco helped the bank move quickly and successfully into the market by defining a structured approach to perform due diligence on a fintech organization that would offer a third-party software-as-a-service (SaaS) digital lending solution. This white-label solution provided the bank with a modern, agile platform without having to invest in infrastructure or technology.

The bank relied on Capco to manage daily interactions with the fintech vendor based on a proven track record of remaining objective and working efficiently alongside third-party organizations. The Capco team engaged with multiple stakeholder groups to review the abilities of the vendor and assess alignment with the bank's needs.

The bank can now offer a branded end-to end digital lending solution to customers while maintaining full control over the origination process. As a result, the bank expanded its customer base through new loan originations, increased profitability, provided better customer experience and enhanced its competitiveness with peers in the personal lending space.

DIGITAL-FIRST CASE STUDY

Mitigating risk while building a digital-first lending platform with assisted channel capabilities.

A large regional bank asked Capco to design and build a new personal lending platform using a digital-first approach. Capco built the digital channel, added the new lending process to the bank's workflow, and extended the look and feel of the online offering at the bank's call center and branches. During development, Capco helped the client mitigate risk by managing a complex multi-vendor program, including vetting, selecting, and integrating the third-party vendors that provide prequalification and identity verification services throughout the loan application and servicing lifecycle.

The new platform required more than 20 integration points with the bank's existing interfaces and back office systems. This involved integrating new technology as well as data flows, such as credit scores, credit bureau insights, and income verification information.

Relying on Capco's expertise across various risk disciplines, including fraud, compliance and information security, the bank built tight controls to limit its exposure during the phased launch of the new loan product into the mass market. The bank is now in a position to expand its credit business, while effectively managing the risk associated with unsecured lending.

THE CAPCO APPROACH

Capco has a strong record and a proven approach to launching new digital unsecured lending offerings in in the United States and Canada. We typically perform a strategic analysis at the beginning of engagements and deploy a skilled execution team to design, build, test and launch new unsecured lending products. Through our work experience, we have built a comprehensive tool kit of methodologies and techniques that accelerate a bank's entrance into a market as well as enhance existing offerings.

Capco's flexible approach gives clients a choice of services, ranging from program support to program leadership and full delivery of a market-ready product. When clients work with Capco, they have the trust and confidence that we can quickly help them enter the digital unsecured lending space with a market-ready strategy aligned with their vision and brand and tailored to practices in their country.

Here is a typical template of what Capco does:

INTEGRATING VISION AND STRATEGY

We begin with a strategic focus. Working closely with you, we establish a deep understanding of your enterprise vision and your brand's standing in the marketplace. We jointly define a digital vision and a suitable strategy for making it real.

Next, we assess the current state of the bank, your risk appetite, and target customer base. With the business requirements gathered, we create a model to transform the current state into your future state and develop a holistic approach for designing and implementing an end-to-end solution.

Using this analysis, we work with you to define the products and services that target customers want and need, and the consistent digital experience the bank wants to offer across all channels. A key question guides our validation of your digital vision: What aspects of your business model need to change to realize your digital vision and opportunities?

MAPPING THE CUSTOMER JOURNEY

The next phase is to envision every step of the customer journey. Knowing where digital journeys will begin and end and opening new pathways helps rethink and re-engineer processes and identify outdated systems that need a digital refresh.
A clear understanding of the targeted customer segments is essential to creating the desirable customer experience. Capco helps clients gain a deeper insight into the most promising customer segments through demographic research, focus groups, customer interviews and other techniques.

DESIGNING AND BUILDING THE UNSECURED LENDING OFFERING

Taking what we've learned from our strategic assessment and evaluation of the customer journey, we begin the structural business design process with an overarching target operating model that enables us not only to articulate the structure details but also to apply theoretical testing.

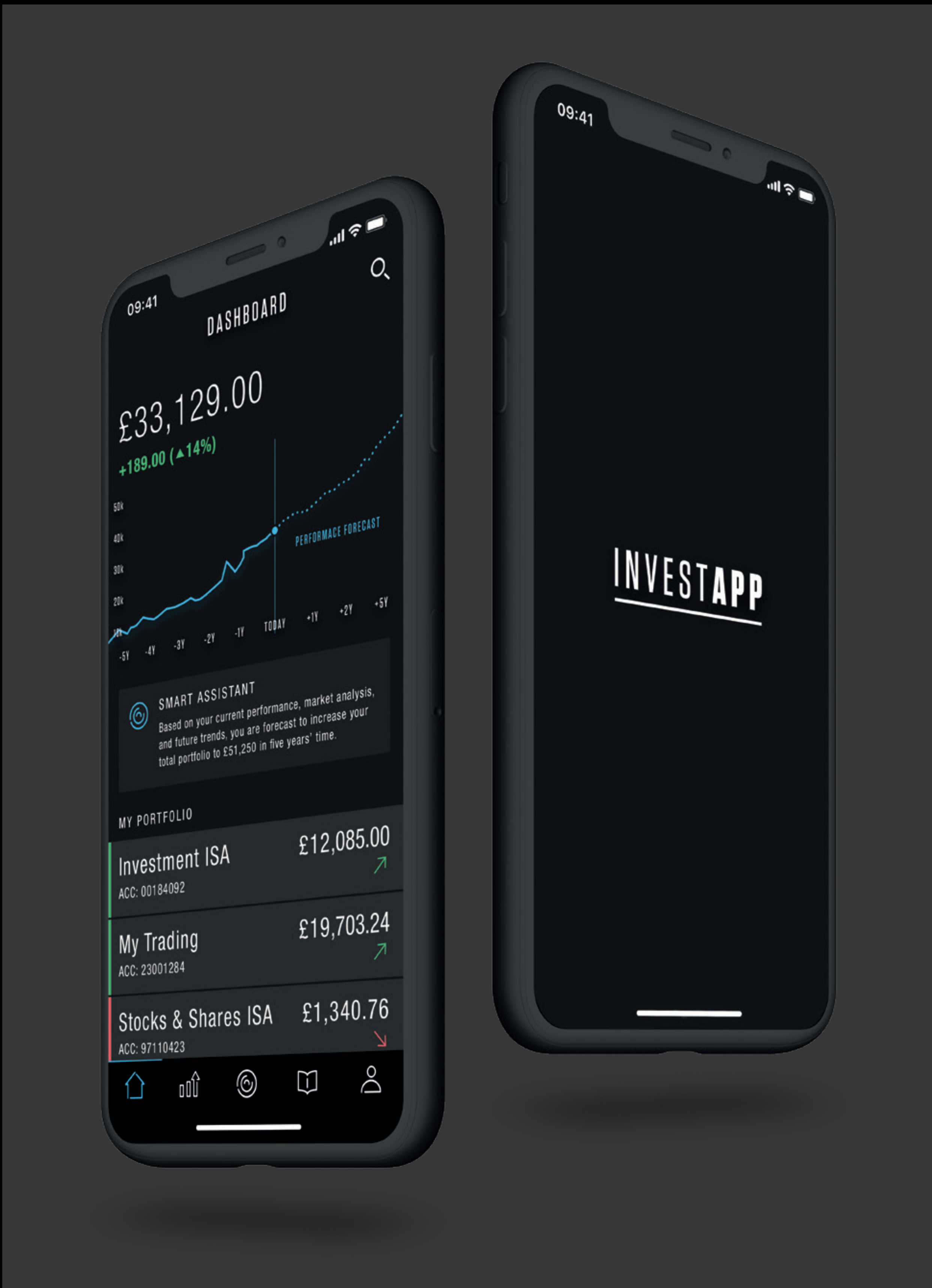
This approach has several advantages. The use of the target operating model instills a common approach and discipline which flows into a set of business services. It also clearly identifies beginning and end points of each banking process. Because this model is repeatable and reusable, it's a key element in our arsenal of tools – those proven templates that Capco brings to clients to accelerate the launch of a new digital product.

LAUNCHING THE NEW UNSECURED LENDING OFFERING

As the new digital unsecured lending product is rolled out, Capco tracks the benefits being realized and helps clients pivot from monitoring legacy performance measures to modern ones, achieving even more aggressive goals. For example, by identifying and prioritizing profit drivers, we can evaluate the type and level of investment needed to achieve the maximum impact on:

- Operating cost
- Loan balance growth
- Customer acquisition
- Customer experience

Our methodology for deploying next-generation technologies and new business models enables clients to rapidly attain their strategic vision. We shape winning, market-ready strategies that embody your vision of your brand in the marketplace. We guide you through critical decisions, apply rigorous logic to rethinking business processes, and bring your bank to the forefront of the digital landscape.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PERFORMACE FORECAST
SMART ASSISTANT
Based on your current performance, market analysis, and future trends, you are forecast to increase your total portfolio to £51,250 in five years' time.
MY PORTFOLIO
Investment ISA
ACC: 00184092
£12,085.00
My Trading
ACC: 23001284
£19,703.24
Stocks & Shares ISA
ACC: 97110423
£1,340.76
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INVESTAPP

DESIGNING DIGITAL EXPERIENCES IN WEALTH

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1. INTRODUCTION

Traditionally, wealth and investment management (WIM) firms have prided themselves on building strong customer relationships and delivering bespoke services through trusted personal advisers. We see this fiduciary-based relationship and trust continuing. However, businesses will need to adapt to changing customer expectations.

The younger generations are experiencing newer, more seamless, and personalized digital experiences in most aspects of their lives, and they are experiencing an unprecedented wealth transfer;[1] hence WIM organizations need to be at the top of their games to be successful. They need to provide best-in-class online, mobile, and face-to-face services to attract and retain these clients.

And, they are not only in competition with their old established peers. There are now nimble fintech players that are also trying to get in on the act and growing their market share, particularly in the increasingly significant millennial market. To help combat this, we believe that WIM organizations need to turn their attention to the latest and most innovative ways to stand out from the crowd, and suggest that developing a "design thinking" (DT) culture could be a critical differentiator. DT is an innovation methodology that focuses on understanding people's real problems and rapidly exploring a range of creative solutions. It accelerates the definition of high level, tangible requirements through close collaboration, rapid prototyping, and testing with end-users ahead of agile delivery. Having this methodology in place when creating your user experiences provides you with confidence that what you are designing and building is definitely what your customers need. In this article, we highlight the critical principles for business leaders and digital teams to consider when designing the user-experience (UX) for WIM services of the future.

[1] Research estimates that the figure for intergenerational wealth transfer in 2017 already crossed the £69 billion (over U.S.$90 billion) mark in the U.K. and in ten years' time this is expected to increase to £115 billion (over U.S.$150 billion) annually, an increase of 67%. (Source: https://bit.ly/2IEdwsF)

2. ONBOARDING AND LOGIN

Client onboarding is the first interaction the customer may have with your brand and so it is of paramount importance for setting the tone for the rest of their experience with your enterprise. Unfortunately, many processes today are time-consuming, clunky, and inefficient, which is a far cry away from what could happen should a design thinking approach be in place.

Typically, a financial institution will collect documents and individually engage credit reference agencies to verify customer identity against other independent data sources on their behalf. However, it does not have to be this way, and by using the fundamentals of design thinking the onboarding process can be made significantly less painful.

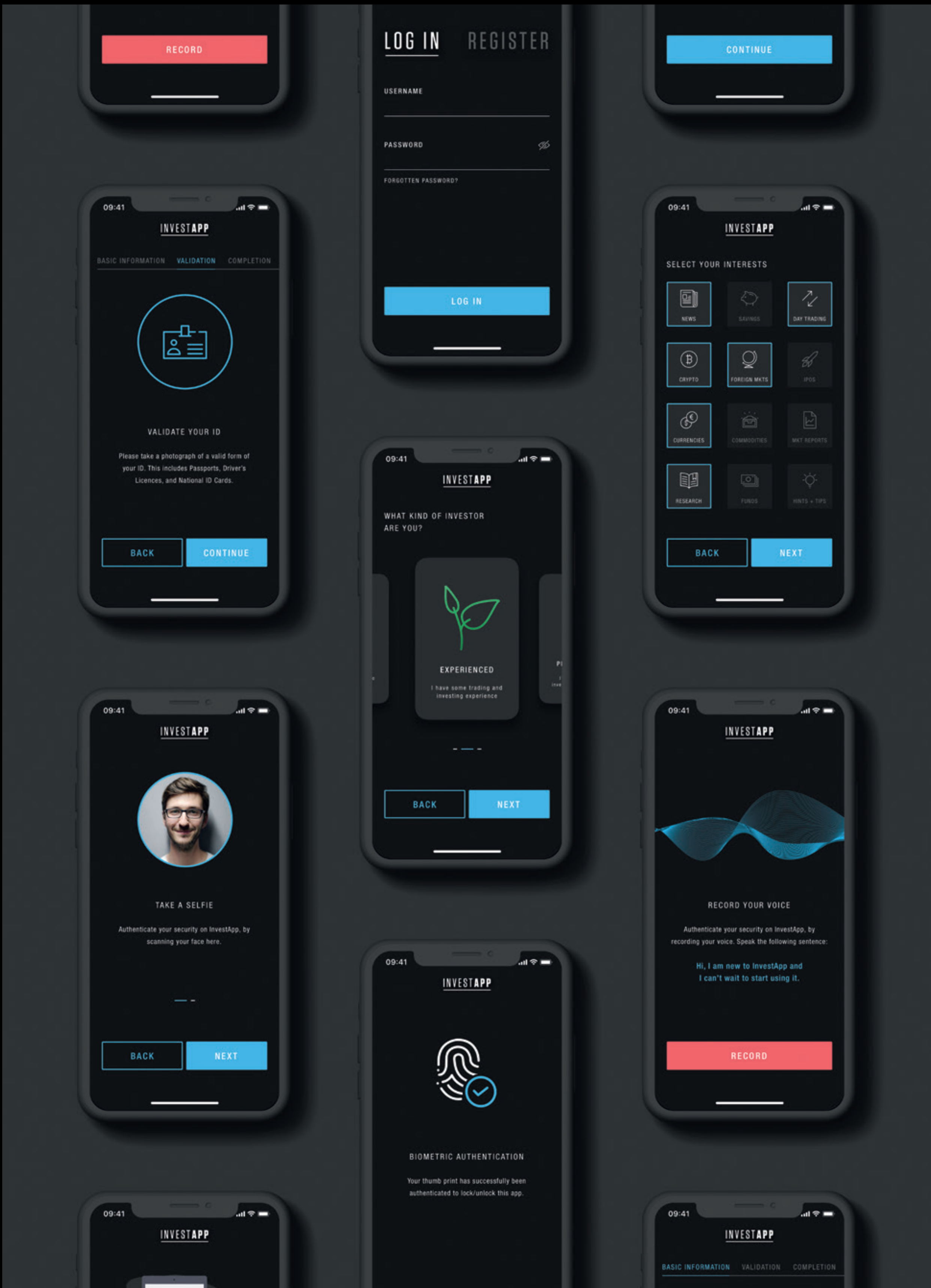
2.1 Simplification: to generate a good experience right from the start, WIM firms should encourage customers to sign-up and create accounts via a single interface, such as a smartphone app. Being forwarded onto other channels through a mobile app is not streamlined, and with an increasing amount of neo-banks offering a straightforward onboarding process it is important that WIM organizations follow suit. It is also important for the process to include basic sign-up questions, stripping away anything that is superfluous and reducing the number of steps in the process to the absolute minimum. With the demand for mobile banking increasing at an unprecedented rate, ensuring the process is limited to a single device and interface will be key in making the process as genuinely mobile as possible.

2.2 Time-saving: social logins are a great time saver that are appreciated by most consumers and benefit from the fact that digitization has enabled a quick and easy flow of information. No one wants to waste time filling out lengthy registration forms anymore. Javelin Strategy & Research and Jumio found that 38 percent of millennials abandoned their mobile banking applications because the process took too long [Jumio (2018)]. There are already examples of how this is being incorporated into digital platforms, such as Pinterest allowing you to log in with either your Facebook account or Google Mail, and industry relevant examples such as eToro, which has the same features. Other elements, including the auto-scanning of ID cards using a smartphone camera, can also be useful in saving time when uploading identification information, and are becoming more prominent in UX-led app designs.

2.3 Biometric authentication: facial, fingerprint, and voice recognition, as well as other biometric technologies, are starting to replace the onerous methods of using multi-factor logins and passwords. Jumio (2018) found that 27 percent of millennials have left mobile banking because they forget their password and 22 percent felt authenticating themselves was time consuming – something that need not happen. Not only can biometrics bring about a faster and smoother onboarding experience, they can also provide greater levels of security than traditional PIN numbers or security questions once onboarding is completed. However, devices employ different standards, so it is critical to consider how a standardized interface would work as an experience for all investors.

2.4 Gamification: the onboarding process should be as easy and engaging as possible, and gamifying the experience or breaking down the onboarding process into digestible chunks, like elements of a computer game, can make the process seem shorter. In addition, like a game, the onboarding process should allow for the process to be continued at a later time as well. With busy, modern lifestyles, the thought of having to set aside a lot of time for an onboarding process will be off-putting for consumers and needs to be a consideration for the process designers.

2.5 Referrals: using referrals during the onboarding stage is a great way to get your own customers to become ambassadors of your app and help grow your user-base with little input or effort. To make the step more appealing to customers, monetary incentives for successful referrals should be considered – something already implemented by many other apps. However, above all else, the process needs to be straightforward and not time consuming. Regardless of offers and monetary incentives, the most likely way for a customer to proceed with a referral process will be if it contains a single, straightforward step. However, striking a balance is key. Some users find it off-putting if interfacing with a financial services platform is too easy, giving the impression that the platform is not fully secure. The challenge is to enable a thorough onboarding service that has complex operations happening beneath the surface of a streamlined, beautiful, user-friendly interface. To do this, prioritizing elements of the process that are slightly lengthier will be key in the balancing act. For example, keeping the referral process to a minimum number of interactions and steps, whilst having a multi-biometric authentication process, will help the user feel the process is secure, but straightforward. As Steve Jobs said: "Simple can be harder than complex: you have to work hard to get your thinking clean to make it simple." Steve Jobs [BBC (2011)]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INVESTAPP
BASIC INFORMATION
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VALIDATE YOUR ID
Please take a photograph of a valid form of your ID. This includes Passports, Driver's Licences, and National ID Cards.
BACK
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I have some trading and investing experience
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NEXT
TAKE A SELFIE
Authenticate your security on InvestApp, by scanning your face here.
BACK
NEXT
RECORD YOUR VOICE
Authenticate your security on InvestApp, by recording your voice. Speak the following sentence:
Hi, I am new to InvestApp and I can't wait to start using it.
RECORD
BIOMETRIC AUTHENTICATION
Your thumb print has successfully been authenticated to lock/unlock this app.
INVESTAPP
INVESTAPP
BASIC INFORMATION
VALIDATION
COMPLETION

Clear and concise performance metrics with future growth projections based on AI

Detailed item view including live prices and metrics. Related news and start of buy/sell journey

‘Buy’ preview screen, showing further insights, live prices, and smart assistant push - further encouraging the user to proceed with the transaction

3. ACCOUNT VALUATION AND PERFORMANCE

Visualization should be the primary consideration when it comes to user experience on apps and web-platforms. The human brain processes visual information much more effectively than textual data, so it is imperative complex data is represented in a clean and concise way. The significant increase in mobile processing power and screen display quality has meant that many successful apps now lead with a design-led user experience. Quapital is an example of how the humble savings account can be elevated from the stereotype of a dry, functional subject, to something engaging and beautiful to use and look at. Importantly, though, the design does not come at the expense of convenience and functionality.

Consumers should have easy access to their wealth dashboards once the login process is completed, focusing on account valuation and performance to keep them engaged. Key information depending on specific scenarios should always be displayed to the user on a default screen for maximum convenience. For instance, in an investment app, the user will want to know how much they have invested overall, how much their investment has increased or decreased by, and likely a visual representation of actual/percentage changes too. This information should be laid out as simply as possible and should be the first thing the user sees, summarizing the key elements of their investments before they go to other areas of the app to delve deeper into them.

Visualization tools like infographics help tell the user the story of their finances by visually representing tedious, tabular data in an interactive, attention-grabbing visual and will help with the usability of an app. Adding interactivity to dashboards enables engagement with the data, especially with the help of sliders that can be used to foresee future positions through data analytics. This can provide powerful knowledge to the user, whilst providing an element of gamification in the process, and will be a significant factor in increasing the frequency of user interaction. The pension fintech, PensionBee, includes an interactive and user-friendly pension calculator to work out the required annual savings needed to receive your desired annual pension amount after retirement. By providing an interactive platform that combines all of the customer's pensions, the user becomes much more aware of their financial situation – increasing the likelihood that they will set themselves financial targets. In this instance, the interactive, user-focused design could lead to not just more frequent engagements with the app, but also an increase in monetary contribution as the user seeks to achieve personal financial goals that they may have previously been unaware of. WIM firms should consider a similar approach.

"*The pension fintech, PensionBee, includes an interactive and user-friendly pension calculator to work out the required annual savings needed to receive your desired annual pension amount after retirement.*"

4. PERSONALIZATION OF SERVICES

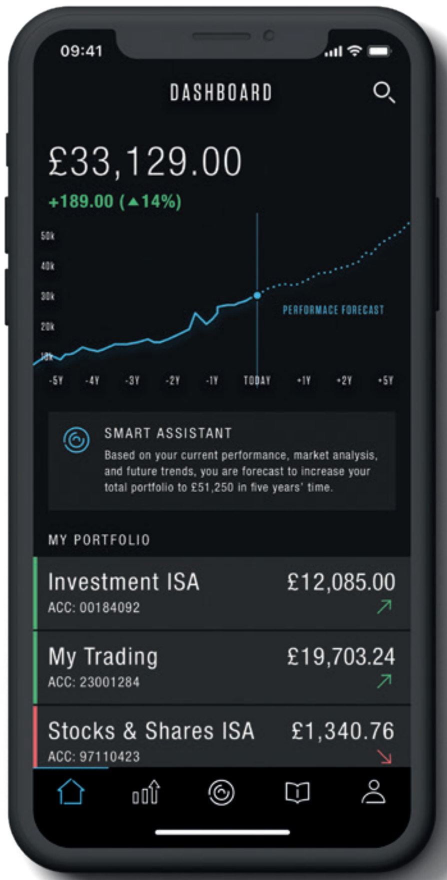
Investors' goals, values, and preferences are influenced by their demographic segment, life stage, household balance sheet, and specific tax circumstances. Millennials may be saving for a down payment on their first home, whereas retiring Baby Boomers are focused on extracting equity from their home to fund retirement income. To design the best UX for financial products and services, we need to get to know our users better and identify what sets them apart from each other. A good way to identify the needs and motivations of users is by creating personas for each group. A persona is a representation of a certain segment or audience who will be using your products or services, outlining a high-level view of this specific user. Included in personas you will typically find a photo/icon of the user, a biography, wants/needs, pain points/frustrations, brand associations, and goals/aspirations. They can be a great way to create consensus among your team members in how and who your products and services should be positioned to, helping focus future marketing initiatives. A survey by Smart Communications (2019) found that nearly two-thirds of respondents are likely to switch vendors if communication expectations are not met. Combined with the fact that 45 percent of U.K. respondents specifically cited communications that are not relevant to them as influencing their decision to change vendors, and the ability to personalize marketing from personas becomes even more apparent.

The U.K. mobile-only bank, Monzo, takes personalization one step further through using customer payments data to provide personalized offers and advice. By analyzing daily commute costs, for example, Monzo's algorithms are able to suggest savings to customers, such as telling them to switch from a pay-as-you-go travelcard to an annual one. This also helps the bank in terms of building trust with the customer. Once the relationship involves personalized recommendations that will directly help the user, the app/service goes beyond a platform for solely managing money to something that is appreciated by the consumer. The ability to be personalized needs to be considered by WIM firms. It does not necessarily have to be immensely complicated - even being able to customize the look and feel of a trading or investment app provides a level of micro-personalization that puts the user in control of their own UX. It is easy to overlook how often we already personalize things on a small scale; our mobile devices already have individual displays, sounds, layouts, apps, cases, and physical design. Money is an incredibly personal thing, so having the ability to customize how we interact with it should be high on the design agenda.

The areas and amount of personalization will differ depending on the brand in question. The City Index app, for example, allows users to drag and drop service icons to the bottom navigation pane, allowing them to choose which services they want easy access to from their navigation bar. This is a more functional approach to customization. Atom Bank, however, allows you to create a personalized name and logo for the app, such as Jenny's Bank or Peter's Bank, as well as a personal color palette – removing large elements of the brand from the product. This customization is far more targeted at the individual at a personal level, and less towards the functionality of the product. Looking at these different examples, it is no coincidence that neo-banks, which offer the highest levels of customization and personalization, are proving far more popular with millennials than any other age group. The ability to have an app looking and working how the user wants is growing in necessity, particularly if the product wants to appeal to what is becoming an increasingly significant millennial market.

A recent YouGov poll found that just 36 percent of British consumers trust banks to work in their customers' best interests [Palenicek (2017)]. Evidently, trust is still an issue banks need to work on, more than ten years after the market crash. However, there is an opportunity for firms to understand which features are most frequently used, improve the refinement process, and tailor apps towards what is actually wanted. Most users will not want a generic 'one-size-fits-all' approach to their app/service and the ability to tailor and personalize, be it the onboarding journey or the default section of an app, is fundamental in making users feel important. By helping users build personal relationships with their products or applications, you can also start to build trust – something that cannot be underestimated.

Allows users to personalize their app experience and receive tailored content and advice specific to them



5. TOP UP/WITHDRAW FUNDS

As well as the traditional linking of bank accounts to a user's account, customers should also be given the option of using multiple sources of funds to top-up their accounts, including non-traditional payment sources such as PayPal, Apple Pay, Google Pay, Samsung Pay, etc. Customer trust with, and usage of, non-traditional payments has risen significantly in recent years, and WIM firms need to cognizant of this fact. WorldPay (2018) estimates that by 2021 over half of all online transactions will be made using alternative payment methods. Given this notable increase, early adopters of the technology, and the convenience it has to offer, will appeal to increasing market audiences. TransferWise, a foreign exchange money transfer service, is an early adopter and allows users to transfer money linked to their cards stored on their Apple Pay wallet to their platform. This seamless process involves entering a payment amount and simply using your fingerprint to authenticate the payment.

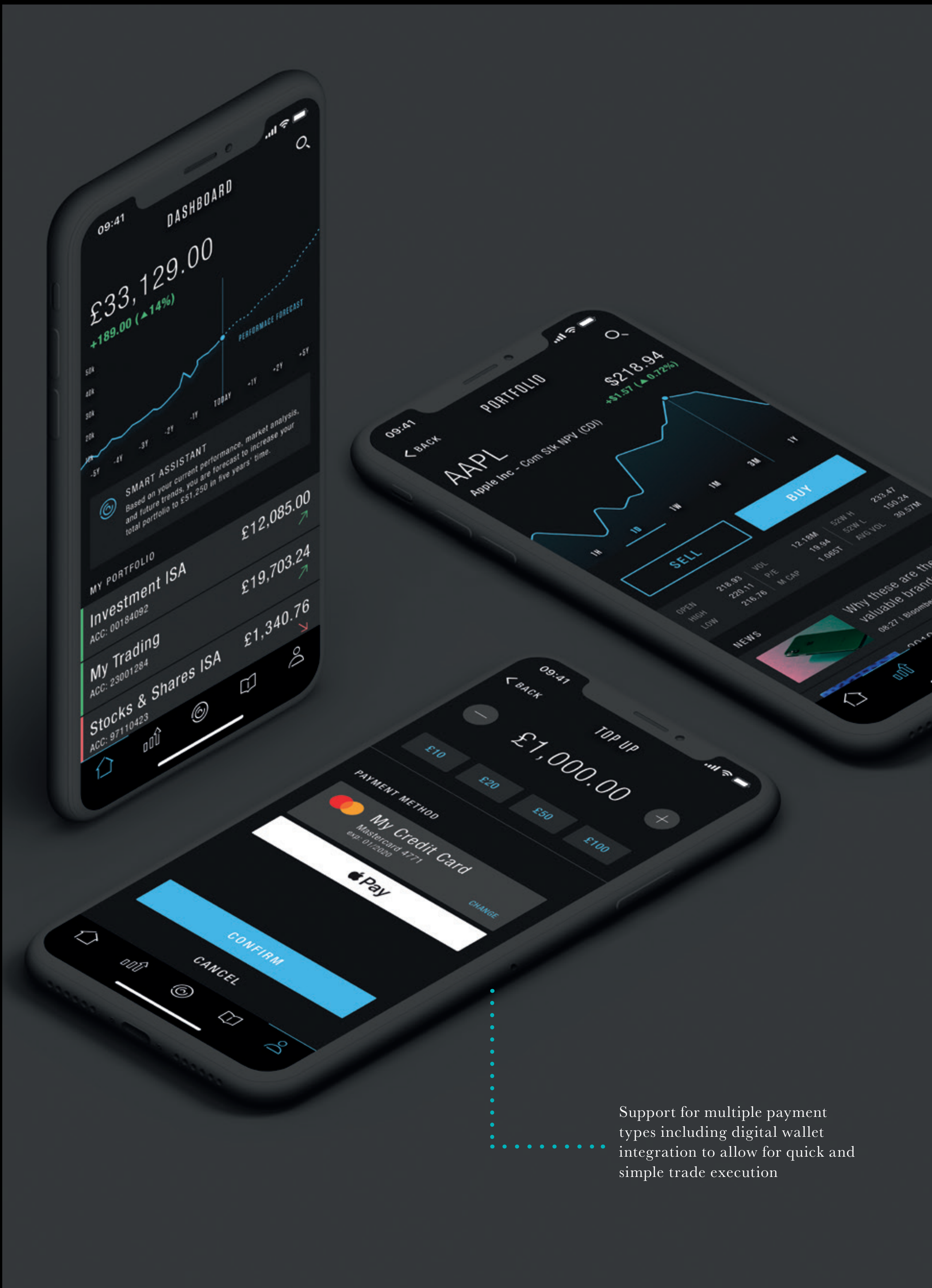
It is equally important to establish a seamless withdrawal process, whereby customers can withdraw their earnings at any point and then put it into their selected account choice, with withdrawal fees clearly being communicated during the initial onboarding process. Not only is this process streamlined, it also builds on the trust element touched on earlier, which will be key for the sustainability of the brand. After all, the customer has earnt the money, so they should be made clearly aware of any charges for moving it. According to an FDIC report, overdraft fees are the leading cause of involuntary bank account closures, highlighting how perceived deception, and the lack of trust that comes with that, impacts customers [Samolyk et al. (2013)]. But small steps towards a better customer relationship can be very impactful - they do not need to all need to be giant leaps. Small, engaging interactions, such as an animation to verify confirmation of top-ups, or push notifications to smart watches (which alert the user that their funds have been withdrawn successfully), may seem like basic facets, but ultimately, it is these regular micro-interactions for otherwise mundane tasks that have a lasting positive impact.

6. TRADE/INVESTMENT EXECUTION

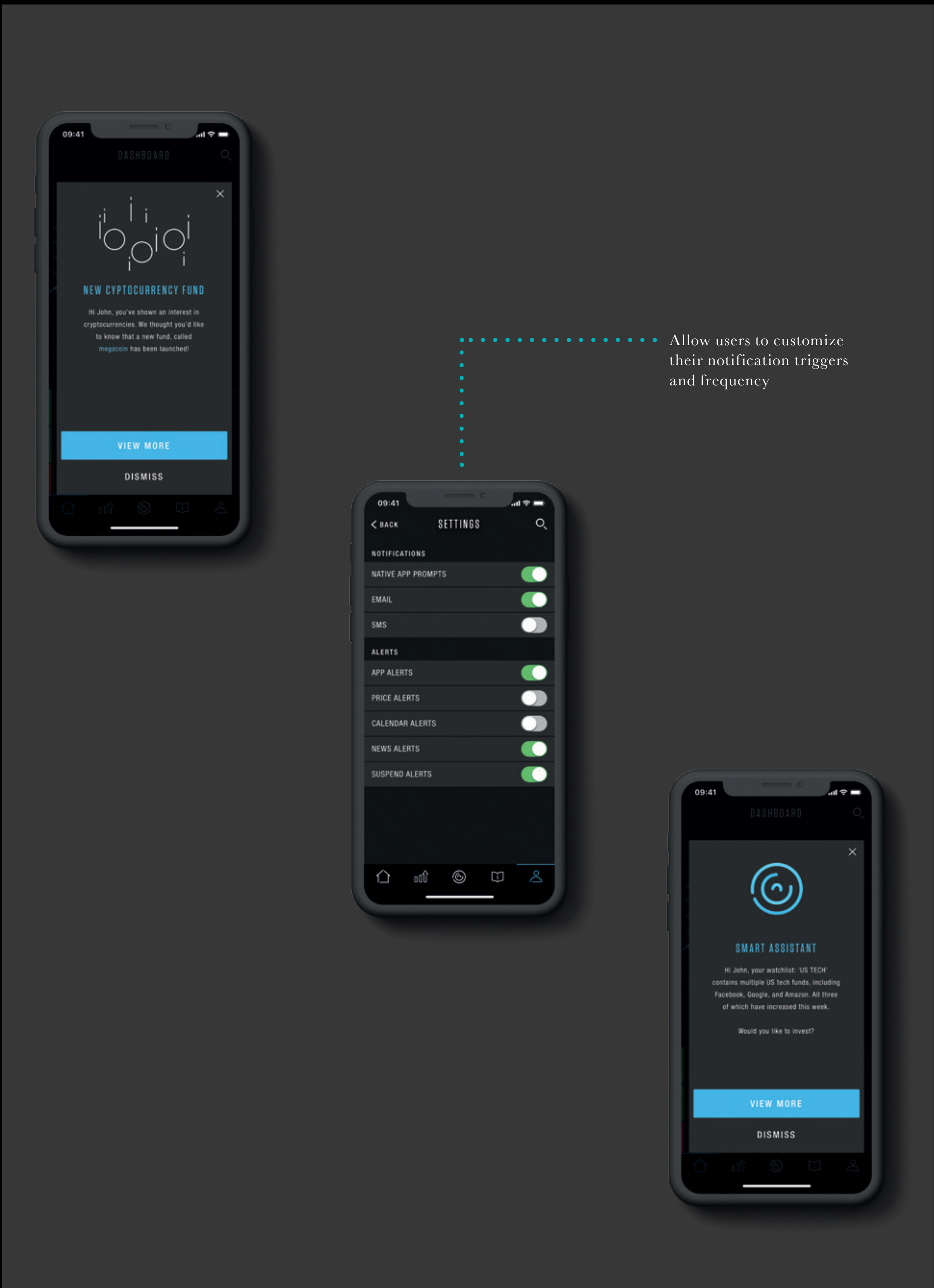
Arguably, the most critical action you are asking your users to perform is to place their investment, and trust, with you. Consequently, it is essential that this step of the process is one of the most seamless and simplified. The path from research, to selection and execution should be a logical one with minimal cognitive load; and setting alerts, limits, and stops should all be part of the final execution flow. If the app allows for different payment methods, the selection between them should be straightforward, with all the authentication being done when the payment type is registered during the onboarding process.

Innovative execution paths should also be considered. For example, when sending an email with research or news that includes your customer's top stock picks, it should have deep linking capabilities so that users can select a link in the news articles, taking them directly to the app and onto that stock's page – ready to be traded in a click or two. This will not only improve engagement levels with the app, but also helps with improving the personalization of the services. In addition, anything that can help support the user with their trading and investments will be largely beneficial and can significantly improve the overall user experience. Chatbots or virtual assistants are great for support and proactive prompts, as well as for how-to guides, and keep the user from having to use more than one interface. Furthermore, it is common, particularly within trading services, to offer news when looking at a stock or share, rather than having to switch between separate news feeds.

"It is equally important to establish a seamless withdrawal process, whereby customers can withdraw their earnings at any point and then put it into their selected account choice, with withdrawal fees clearly being communicated during the initial onboarding process."



Support for multiple payment types including digital wallet integration to allow for quick and simple trade execution


09:41
DASHBOARD
NEW CYPTOCURRENCY FUND
Hi John, you've shown an interest in cryptocurrencies. We thought you'd like to know that a new fund, called megacoin has been launched!
VIEW MORE
DISMISS
Allow users to customize their notification triggers and frequency
09:41
BACK
SETTINGS
NOTIFICATIONS
NATIVE APP PROMPTS
EMAIL
SMS
ALERTS
APP ALERTS
PRICE ALERTS
CALENDAR ALERTS
NEWS ALERTS
SUSPEND ALERTS
09:41
DASHBOARD
SMART ASSISTANT
Hi John, your watchlist: 'US TECH' contains multiple US tech funds, including Facebook, Google, and Amazon. All three of which have increased this week.
Would you like to invest?
VIEW MORE
DISMISS

7. NOTIFICATIONS AND COMMUNICATIONS

Notifications and alerts are important ways to keep the savvy trader up-to-date with the latest status of their holdings and the various events affecting their positions. Notifications for longer-term investment products are less frequent, but for an intra-day trader these are invaluable for keeping them informed when events take place that impact their portfolio. These events can be market developments, technical indicators, economic announcements, reaching specific price targets, or even system outages preventing trading during certain times. There are different ways to reach the user: alerts, push-notifications, emails, and in-app messaging can all be used to communicate with investors as events happen. The type of notifications, frequency, and event triggers should all be made customizable for the user, as without this the information may lose relevance to the individual and become useless. If the notifications are too frequent or irrelevant, the user may trivialize them, or turn them off, and subsequently miss opportunities when more important notifications are issued. A good example of this is the CMC Markets app, which gives users the power to set a multitude of notification options, as well as the events that should trigger them. The benefits of setting up and using pro-active notifications include:

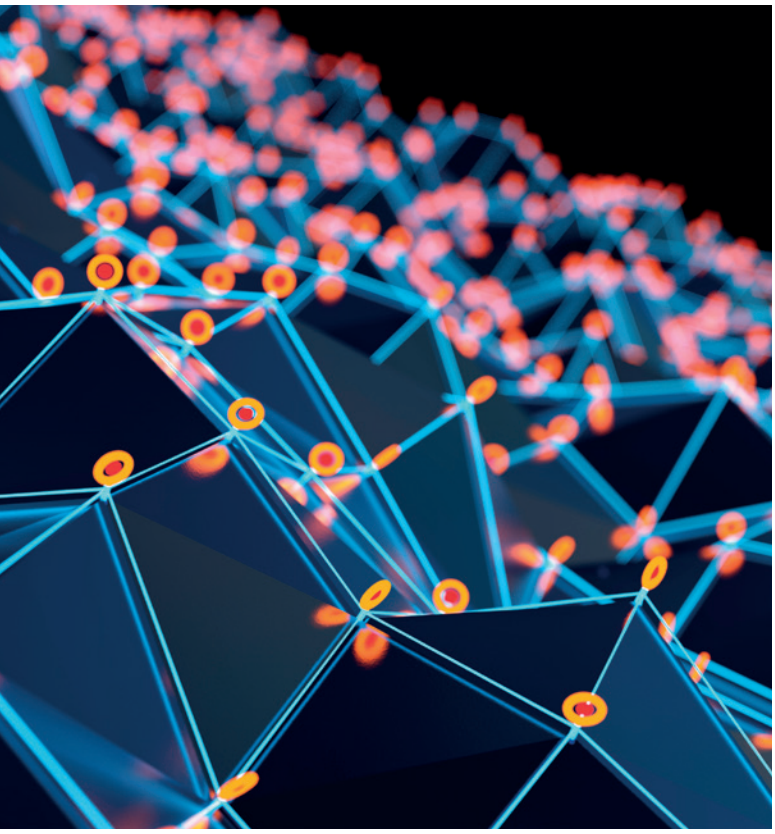
Saving time: customize your notifications to receive price alerts and then execute your trades, saving you time from monitoring price movements manually.

Quick response: delivering push notifications when impactful news breaks, allowing you to make instant buy or sell decisions by a single click when not logged into the app.

Retain app usage: notifications are a great way of increasing returns to your app and engagement with your user base, so long as they are relevant. Frequent, irrelevant notifications outside of user preferences may actually have the adverse effect and frustrate users to the point they leave the service. Research shows that 22.3 percent of people would stop using an app if they received 2-5 notifications a week, so any notifications they do receive need to be aligned to the topics they have requested [Gibb (2018)].

“Notifications and alerts are important ways to keep the savvy trader up-to-date with the latest status of their holdings and the various events affecting their positions.”

8. PARTNERSHIPS AND INTEGRATIONS



Established investment and trading companies can differentiate themselves from the competition by becoming early adopters of the latest financial technologies. Of course, building everything yourself (robo-advisers, machine learning capabilities, hyper-personalized dashboards, etc.) may be a step too far for your cost appetite, so forming a strategic partnership with a fintech that is providing a best-of-breed solution in their niche offering could be a more viable option. With this in mind, instead of viewing fintech's as competition, traditional financial institutions should investigate how strategic partnerships can be used to create an entity stronger than either individual unit could bring on their own. Benefits of these collaborations include cost reduction, quicker time-to-market, improved customer retention, and additional revenues.

U.K. challenger-bank Starling is a huge supporter of the partnership model and have even created a 'marketplace' on their app that allows users to link their bank account to services from other fintechs, such as your pension details to your account via PensionBee or adding travel insurance via Kasko. A recent first in the U.K. investment world also occurred when AJ Bell launched a Developer Hub, allowing external apps to link their services to AJ Bell's Youinvest platform. AJ Bell is also working on a project that will allow its customers to request to be able to view their bank account, pension, and ISA details from external providers via their AJ Bell account.

Application Programming Interfaces (APIs) underpin both these two collaborations and provide the channel to access data between partners. Allowing access to your data and transactional services via a robust API strategy will aid the execution of a smooth and secure partnership ecosystem. However, keeping and enforcing security standards is critical for both regulation and brand longevity purposes, and so must be considered at all times during the design.

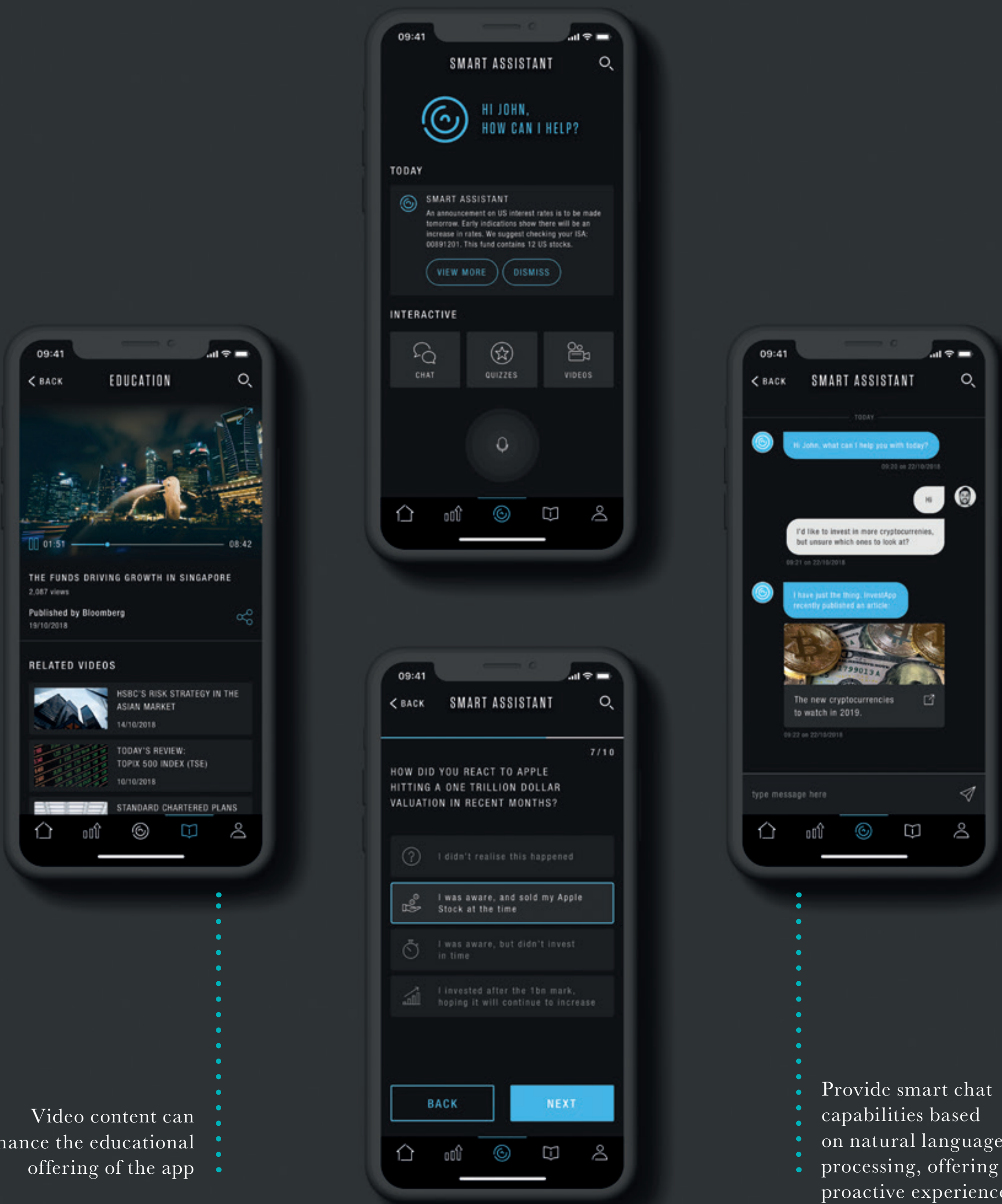
There are many benefits to this model, but primarily it allows for an open ecosystem, which is an attribute that an increasing number of consumers are beginning to prefer. A single service that is paired with other services via APIs will allow open access, and this only helps when viewing their finances. For instance, a trading app could partner with a venture capital funding app and use their investment service within the trading app, allowing users to browse and select a start-up they wish to invest directly into. This would mean users would not need to switch between two apps, and both companies could benefit from an increase in usage as a result of the added simplicity. From a business perspective, the two respected parties could also work together to monetize the combined service.

An example of how brands can integrate with the app, allowing users to ‘add’ products to their marketplace, and build an app ecosystem

An extensive marketplace featuring partners that can further enhance the user’s experience. Users can explore partners within rewards, FX, insurance, savings and investments, and cryptocurrencies to name a few

The user can then have an ‘in-app’ experience of another partner’s offerings. For instance, transacting live FX offerings within the app

Using smart assistants to provide the entry point to chat, support, educational videos and quizzes, as well as hints and tips



Video content can enhance the educational offering of the app

Provide smart chat capabilities based on natural language processing, offering rich, proactive experiences whilst maintaining a human touch

9. EDUCATION / GUIDANCE

Investing can be an intimidating and complicated experience for the first-time investor who must navigate their way between a multitude of products, services, accounts, and fees, whilst usually also lacking the financial literacy needed to make smart investment decisions. In fact, a study by Schroders found that only 37 percent of participants knew what the correct description of an investment manager was. 10 percent thought investment managers were retail banks [Nicoll (2019)]. So, with an apparent lack of knowledge about what an investment manager does, why should we expect customers to be able to manage their own investments effectively? The companies that provide a simplified service execution, coupled with best-in-class learning resources will have a competitive advantage in winning business from millennials. In fact, some neo-banks are making education and guidance central to who they are. This is clearly expressed by Atom Bank's CMO Lisa Wood in an interview with Marketing Week: "It's not about the customer relationship with us, or our relationship with customers' money. The traditional old banks constantly reference their relationship with its customers, but our brand strategy is about helping people understand money much better." [Roderick (2016)]

Fundamentally, a customer base that understands a company's products and services are far more likely to transition to and use them. This simplification of services has already gained momentum within the retail banking but is not as prominent within the WIM industries. Considering the fact that products on offer within WIM are likely to be more complicated, education and guidance offerings will be key to adoption. Some examples of best practice within education and guidance include:

Demo account: allow your users to first invest using a limited feature demo account from which they can invest on real life products by using a virtual currency. This will build up their knowledge of the markets and confidence in their abilities to execute investments using real currency. The IG Index app makes it easy for users to sign-up for a demo account by simply logging in via Facebook to create a risk-free demo account with £10,000 (over U.S.$13,000) of virtual funds.

Features walkthrough: once your new user downloads your app for the first time, a walkthrough of the main features using pop-up messages will help introduce them to the capabilities and service features of the app. These messages can also be displayed to introduce new features whenever your app is upgraded. However, keep this high level and simple. In line with a smooth onboarding process, this element needs to only highlight the key features and be easily interpretable, otherwise it may frustrate users.

Live/robo-chat: allow users to access in-app chat features to converse with either real-life customer service representatives or even bots, programmed to answer common questions. The Capital.com trading apps enables users to chat with bots using natural language processing to answer queries. If chat-bots are used, it is important to ensure that the automated response language is in keeping with the brand language style and is simple to understand. Monzo have an award-winning terms and conditions due to the transparent, honest, and clear tone used, and is backed by research showing that people prefer simpler, more natural language.

Educational content: short videos educating users on trading and investing best practices within your smartphone app would provide a one-stop shop for educating them. Like the robo-chat, language needs to be kept simple and clear if users are to gain maximum benefit from this. WIM comes with an element of risk, so providing users with the security of having some educational content is far more comforting. If this is done effectively, it will lead to more contact with the product.

Gamification: use of items like leaderboards, badges, missions, and levels will encourage your users to increase their engagement with your apps. With the mobile gaming industry forecast [Statista (2016)] to be worth U.S.$74.6 bln by 2020 (80 percent more than in 2016), and with approximately 32.4m people in the U.K. playing games, the popularity of engaging with games is evidently growing. For example, in 2017, Wells Fargo launched a game called 'Retirement City' with the intention of helping America's workforce prepare for a better retirement. The game blends quizzes, videos, mini games, scoreboards, calculators, an online resource library, and other elements to deliver financial wellness concepts focused exclusively on retirement. Players in 'Retirement City' pick one of 40 avatars and move through five neighborhoods on a simulated journey to retirement. Along the way, they earn badges and rack up points as they learn retirement-saving basics, make choices (pull-out-the-stops wedding or modest affair? New car or used car?) and see how life's curves (your house has been damaged by a storm and now there are repair costs) affect long-term savings. This allows players to learn retirement concepts, and benchmark themselves against other players, blending finance and literacy concepts.

10. CONCLUSION

There are many design-focused initiatives, tasks, and methodologies that can have a huge impact on the overall experience of customers. Some are stringent rules, others are more flexible. But there are a number of ways in which you can work toward this:

Incorporate design thinking: in apps, products, websites, or, in fact, any consumer-facing product. The key here is to have a deep interest and understanding of what your customers really want. Empathize with your customers, define their needs, and ideate by creating innovative solutions. Prototype solutions, test with your customers, iterate, and test again until you get it right. Gain feedback and reviews from your customers and ensure they are taken seriously.

Get senior stakeholder buy-in: empower senior management and stakeholders by training them and getting them involved in the design thinking process. Invite them to focus sessions so that they can really see things from the end-user's viewpoint. Projects will ultimately need a senior sign-off, so having a set of stakeholders that understand design thinking will allow for more customer-focused project visions and objectives.

Analyze key trends: look at what your competition is doing. However, only relying on your competition to act first means you will always be playing catch up, so do not use this as your sole source of inspiration. Look at completely irrelevant industries and spot other success stories, because from this could stem an idea or an approach that could positively impact your business. To be genuinely creative and to offer something that no one else is, it makes sense that the source of inspiration will come from outside of the industry, so embrace this.

Embrace technological advances: determine how they can create a positive impact, but make sure that you have a human-centered approach to innovation. Break the stigma that technology is only going to replace humans and use it to serve them better. Early adoption of technology can help establish a customer base with millennials that want the latest design thinking, as well as enhancing the customer experience. It also allows you to work with and learn from the technology earlier, whilst the competition is still getting to grips with deployment.

Be open: sometimes it is not necessary to do everything yourself. For example, why build a new service when you can integrate a partner's service at a much quicker and cheaper cost? Being agile and reacting to changes in the market is critical, so a traditional in-house build, whilst allowing more control, might not offer the ability to act quickly. Furthermore, think about appealing to non-traditional customer bases. The ability to create a mobile WIM app means your services are reachable by everyone who owns a mobile device – use this to your advantage.

“There are many design-focused initiatives, tasks, and methodologies that can have a huge impact on the overall experience of customers. Some are stringent rules, others are more flexible. But there are a number of ways in which you can work toward this:”

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ADAPT TO WIN: THE SIX SHAPES OF INNOVATION IN WEALTH MANAGEMENT

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December 2018

THE NEED TO ADAPT

Change is not easy, and it is important to note its relevance to the evolving wealth management industry. Charles Darwin, the celebrated naturalist, taught us that it is not the strongest species that survive, nor the most intelligent, but the ones most responsive to change.[1] The wealth management industry is at a pivotal point where wealth managers are challenged to adapt to new technologies and changing client and advisor behavior. How will the wealth advisor of the future position itself in an industry of intensifying competitive and technological dynamics? In the short run, the cunning and strong may win, but as Darwin's lesson suggests, in the long run, those unable to adapt may end up on the endangered species list.

UNDERSTANDING WHO YOU ARE ADAPTING FOR

Creating a personalized journey for each client is a competitive differentiator, and one that influences retention rates, scaling wallet share and client acquisition. Success hinges on clear and coherent segmentation of the target client base and an in-depth understanding of the behaviors within each segment. Traditionally, clients were aligned to a menu of products and services based on their assets under management and revenue generated. A more contemporary approach is to embrace client behavior and align innovative technology with a winning strategy that adapts to the target segment.

For example, millennials value experiences and authenticity, regardless of whether they are high net worth or affluent.[2] Adapting by understanding and anticipating client behavior will help to maximize value.

ADAPTING THROUGH INNOVATION

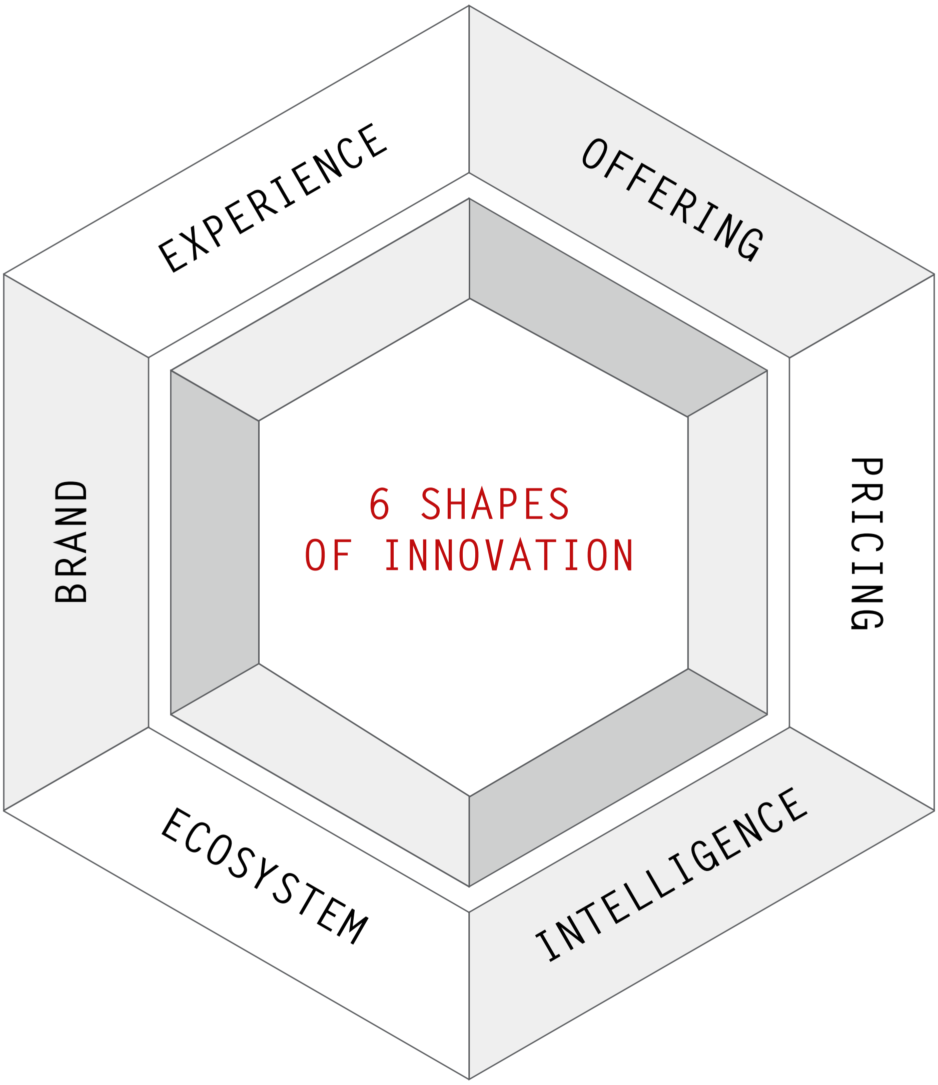
With the continually evolving paradigms of wealth management, uncertainty increases. The emergence of new players and convergence of existing players has forced the hand of traditional firms to re-assess their business models and look to innovation for answers. Innovation is not exclusive to the creation of new technologies, but rather, it is the process of analyzing competitive environments, the behavior of clients, the market and creating new patterns in an ever-decreasing window of opportunity. Innovation creates value, both monetarily and non-commercial, by exploiting differentiations in experience.

Innovation in wealth management is a journey full of uncertainties. Wealth management firms should chart a course and map out how they will adapt through innovation to create real business value. Capco's Six Shapes of Innovation framework is a tool for wealth managers to identify ways to innovate. The framework focuses on the opportunities we believe wealth managers can adapt in to make major impact.

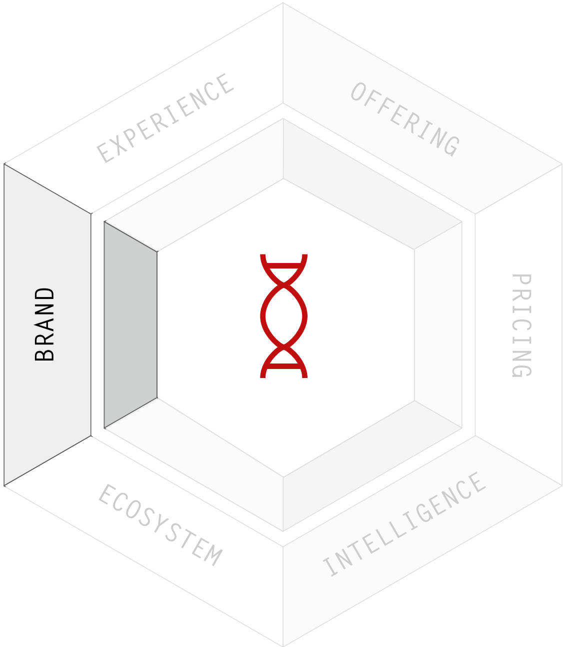
[1] Southwestern Social Science Quarterly, 1963, Lessons from Europe for American Business
[2] Forbes, 2018, For Small Business Week: All About Millennial Consumers And Millennial-Friendly Customer Experiences

THE SIX SHAPES OF INNOVATION IN WEALTH MANAGEMENT

This section will walk through the innovation framework, with a focus on two segments - millennials and Gen Z - to provide a perspective on how to innovate within each of the six shapes and industry examples highlighting firms that are innovating through these shapes today.



SHAPE 1: YOUR BRAND



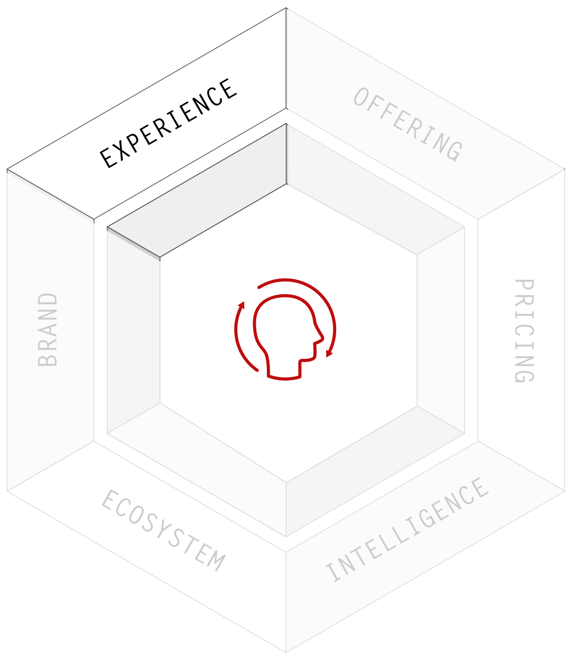
Your brand is your marketing – it's what individuals think of your company, product, everything. Clients often recognize and have pre-disposed associations with a specific firm's brand. Pivoting from a negative to a positive association requires a radically reimagined marketing machine. First impressions are important.

Firms can innovate their brand to serve new client segments. For example, Generation Z is nearing adulthood. This powerful new group of spenders is reinventing the way wealth managers need to target future investors - specifically in 8 seconds or less (the average attention span of a Gen Zer).[3] Understanding the behavior of Gen Z and catering to their needs takes creativity and intimacy, but most importantly, trust. These future investors want to be part of a community, a social activity and cultivate a 'friendship' with your brand. A trusted brand offers an emotional connection to their customers and, advisors must create a customer-centric brand that is fully transparent, from fees to the advice they provide, while going beyond the financials.

Previously known as a firm that catered only to the ultra-rich (minimum investment of $10 million for wealth management relationships), Marcus by Goldman Sachs was launched in 2016 as a strategy to target mass market consumers with a better digital banking experience. The success of Marcus is driven by a model to operationalize customer-centricity; everything at Marcus begins with consumer research.[4] Before Goldman Sachs builds a product, site or experience journey, the firm works hand-in-glove with customers to understand pain points and identify ways to address them. Through Marcus's focus on reinvention, and its creativity and intimacy, Goldman Sachs has a stated goal of being considered a technology company instead of a bank.[5] By rebranding, the bank is hoping to successfully cater its future wealth products to a new generation with a relationship built on trust.[6]

[3] Forbes, 2017, 5 Differences Between Marketing To Millennials Vs. Gen Z
[4] American Banker, 2017, Goldman Sachs plans rebranding of online consumer bank
[5] The Financial Brand, 2018, Marcus by Goldman Sachs: The Future of CX + Fintech in Banking?
[6] Motley Fool, 2018, Goldman Sachs Has Big Plans in Consumer Banking

SHAPE 2: EXPERIENCE



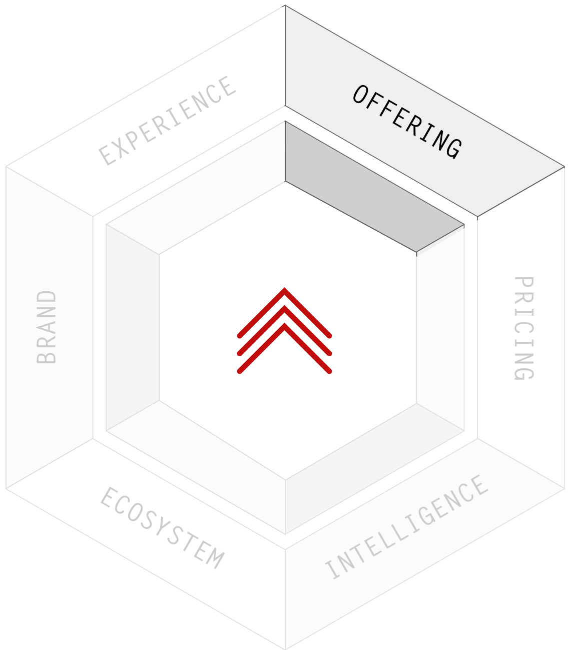
Experience is the face of business strategy and provides an opportunity to build competitive value that cannot be easily copied. There is an art and a science to new experiences: mapping the habituations and behaviors of the client, and developing technology and services, all of which are geared towards providing the best experience possible. Experience design needs to be expressed with the right form, content and behavior for both today's client and advisor, and in anticipation of tomorrow's.

Millennials want choices and expect products to be delivered with unparalleled service. The financial advisor of tomorrow will need to provide this cohort with a personalized journey where their wealth is managed holistically. Millennials regard technology as an additional way to communicate and invest, but not as a substitute for personal interactions provided by a wealth manager. They expect advisors to use technology where it fits, and despite being price conscious, they are willing to pay for quality and convenience. However, not everything needs to be digital and firms need to determine what is the anchor for their unique experience – the phone, the tablet or human advisor. This will be a major factor in driving the definition of what the experience journey will look like. A goal of the advisor is to fragment major decisions into digestible chunks for their clients. The information required for millennials to make major decisions can be complex and the screen real estate of a device may not enable the best experience in every scenario. Firms need to determine where it makes sense to innovate, and where an in-person or paper-based approach may result in a better outcome.

Startups like SigFig have pioneered some of the innovative solutions that have modernized the traditional wealth advice experience.[7] SigFig puts the customer's needs first and builds back towards banks and core providers to provide fulfilment, whereas traditional providers would build around a banks existing infrastructure. This differentiation has won them partnerships with UBS, Wells Fargo and Citizens bank – powering their automated advice platforms.[8] By intimately understanding the client journey, they have expanded their digital experience, including a new wealth management platform, which automates the many steps in client onboarding. These innovations are also creating better experiences for the advisor, by executing their mundane tasks more quickly and efficiently, allowing them to focus on personalizing a client's experience. There is tremendous value to be gained in freeing up human financial advisors to be able to enhance their services and scale their share of wallet.

[7] Reuters, 2018, Wealth management startup SigFig secures $50 million round led by General Atlantic
[8] American Banker, 2018, Getting banks to break up with their vendors: SigFig wants in

SHAPE 3: OFFERING



> *Your margin is my opportunity.*
>
> - JEFF BEZOS[10]

This quote was behind the growth of a behemoth of offerings distributed seamlessly to the customer by Amazon. Similarly, wealth managers are starting to see windows of opportunity as adjacent offerings, such as complementary protection products coming into the fray. Acquiring clients is tough, by leveraging existing brand equity as the anchor to bundle complementary products and services can help firms drive increased share of wallet.

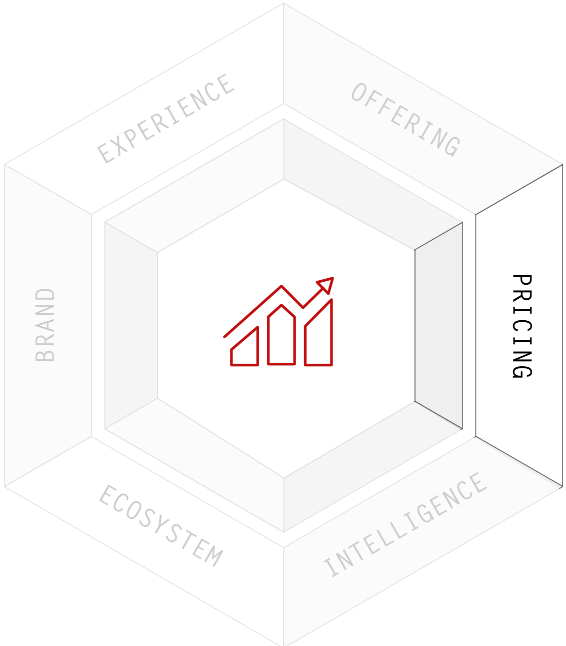
Millennials want to access and manage their holistic personal balance sheet in one place in relation to their life choices and goals. Advisors need to serve these individuals on their financial journey with solutions that feel tailored specifically for them. The shift in mindset from a monochromatic life journey focused on work and retirement, to a spectrum of life journeys - like multiple career breaks – is key to effectively serving millennials.

There is a convergence of financial services into the wealth arena as insurance firms move into planning and investments, investment firms move into banking and protection, and banks move into investments and planning. The winning wealth managers will be those that can demonstrate the holistic understanding of the millennial and conveying how that fuels their relevant personalized offerings. Bundling customized services based on behaviour will provide a compelling experience and cultivate a more intimate relationship between an advisor and their client.

Insurers and 401(k) providers have traditionally relied on a commission-based salesforce to distribute products, but as RIAs grow far faster than broker-dealers, firms like Principal Financial Group are pursuing acquisition strategies to gain more direct access to these RIA channels.[9] Principal is a provider of defined-benefit retirement plans and to create more opportunities for service expansion, the firm acquired B2B robo-advisor, RobustWealth. The robo-advisor has built a highly effective wealth management platform that can be leveraged by the mass market. Tack that onto prominent insurance and asset management providers, firms can bundle services, making their footprint into the wealth industry larger and more competitive. Leading firms will follow this kind of innovation of adopting new offerings and features and delivering existing offerings through new channels.

[9] RIABiz, 2018, As Principal takes RobustWealth reins, the looming question is whether it follows the Northwestern-LearnVest script, which had a depressing final scene
[10] Reuters, 2017, JPMorgan's Dimon taking customer pricing hints from Amazon

SHAPE 4: PRICING



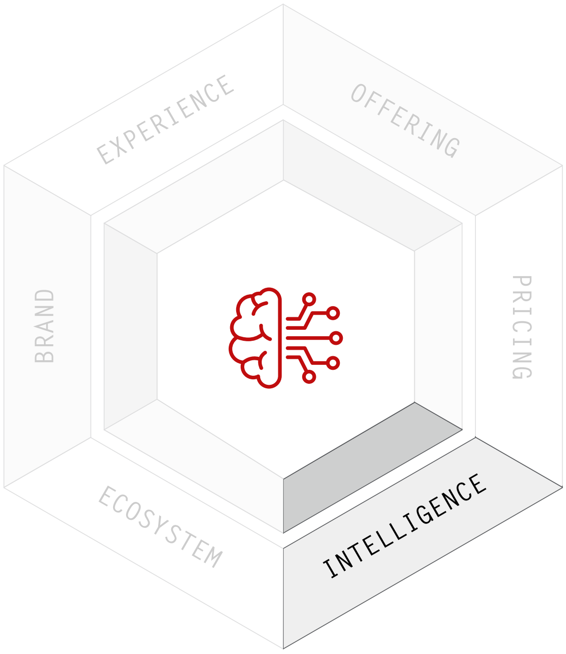
Intensifying competition and price wars have compressed margins, and new competitors have entered the fray with innovative pricing models. Discussing fees has become a regular topic among Gen Z when compared to their Baby Boomer counterparts; a quick search on well-known fintechs will yield hundreds of conversations where millennials are openly speaking about their financial situation and gathering advice from peer-to-peer networks on where to invest their money. This new environment of openly discussing fees has compounded the need for players to introduce innovative fee-structures that are priced for value and transparent to clients.

Millennials have been consistently targeted by subscription-based fee structures from companies in other industries. Think about Amazon or Costco – these companies that provide an annual subscription fee and create an ongoing relationship with their customers. Millennials have an innate loyalty to these companies and a proclivity to the subscription model. They do not want to be charged for every service that is provided to them by an advisor. Innovating a subscription-based fee structure creates comfort that clients can ask questions without the after-thought of being charged an extra fee. Millennials can simply pay for the level of subscription service they need, maximizing what they perceive as valuable. This allows advisors to get creative with customized monthly / annual subscriptions that can target a wider range of clients and provide flexibility through choices of service levels.

Fintech startup, Acorns, considered a new millennial investing strategy, offering a unique solution that leverages nudge economics to overcome the most common mental barrier, "I don't have enough money to invest." For each credit card transaction, Acorns round-up to the nearest dollar and invest that into an Acorns account. Not only is it simple to use, but it has a pricing model that is perceived as incredibly valuable by millennial and Gen Z clients. A subscription model that charges a small-dollar amount ($1, $2, or $3 per month) for its various service tiers and drives revenue based on account volume, not AUM as many traditional firms do. Big banks are taking a hint from the Acorns model, JPMorgan Chase and Wells Fargo have rolled out similar features, launching Finn and Daily Change, respectively.[11]

[11] Yahoo Finance, 2018, Spare change investing app Acorns now manages $1 billion

SHAPE 5: INTELLIGENCE (ARTIFICIAL AND HUMAN)



Beyond just the machines, intelligence includes leveraging both artificial intelligence (AI) and human intelligence to scale competitive advantage. Given the buzz around AI, less focus has been placed on ways to innovate through emotional and creative human intelligence. AI can both amplify human intelligence through better insights and decision making, and free up advisors to focus on higher value activities. For example, time can be spent cultivating more intimate and higher value relationships.

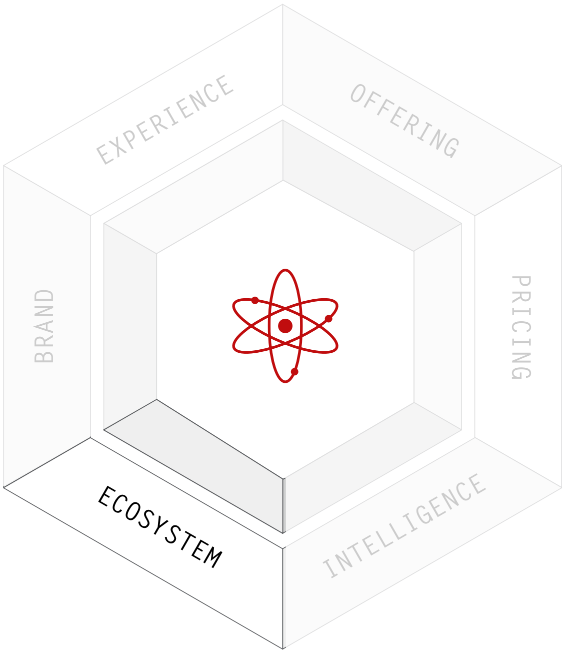
While AI is making impact, millennials still look for emotional, human support though their life-journey. By leveraging artificial intelligence for lower value processes and procedures, the human advisor can focus on the most important value in building a distinctive advisor-client relationship that lays the foundation of trust.

AI allows the advisor time to empathize with their clients and focus on all intersections of a client's life, including more frequent life choices (not just major events). Being a part of the client's ecosystem provides more customer-centric, value-added services. AI can provide insights that the advisor can use to build around the client's needs. The massive data sets required for pattern recognition and machine learning are here and tapping into this data can uncover opportunities for more targeted offerings.

Morgan Stanley is leveraging their AI tool, Next Best Action, providing advisors with insights specific to their clients and even suggests portfolio adjustments, trades or just reaching out for client conversations.[12] Mentioned previously, technology is important, but not the core factor for Gen Z. Next Best Action is enhancing the human advising process, which is augmented by machine learning. The system focuses on three parts of the experience for both advisors and clients, (1) investment insights and choices for clients, (2) provide operational alerts, and (3) includes content on life events; the system could recommend the best local hospitals, schools and financial strategies for dealing with the illness. That life-event content has the potential to help create a trusting and value-adding relationship between clients and advisors.

[12] Harvard Business Review, 2017, How Machine Learning is Helping Morgan Stanley Better Understand Client Needs

SHAPE 6: ECOSYSTEM



In the last few years the wealth industry has seen an ecosystem of partners, vendors and alliances come together to create better services for clients. Whether it's manufacturing funds, distributing products, incubating technology or designing great experiences, wealth firms are recognizing the need to focus on what they do best and partner with others for what they don't. It has changed the operating model and has provided an opportunity for firms to build strength from their weaknesses.

Speed to market has become a major differentiating factor in this rapidly moving environment. Firms are recognizing the value of bringing an offering to market in a matter of weeks versus months through partnering with a third party with a strong capability. Collaboration with a growing ecosystem of providers can create an opportunity to reduce costs, comply more easily and effectively with regulation and ultimately serve their clients and advisors with more innovative solutions. For example, a firm that has a core competency in manufacturing advantaged products can partner with a technology platform, which has a core competency in delivering compelling client experiences.

As uncertainty grows, traditional wealth managers will have less time to embrace new behaviors from younger generations, like Gen Z, and take actions to acquire, scale or retain this unique investor market. By focusing on the core business that provides the most value, wealth managers can identify the weakest parts of their business and address those needs, whether it be their platforms, operations, products or services.

J.P Morgan wanted to target a segment of the market with a leading wealth management experience, which resulted in a partnership with Investcloud to accelerate the firm's development of a brand-new digital wealth offering.[13] The partnership was a strategic move to tap into an experience-centric model with the launch of new digital investing capabilities that Investcloud's innovative technology solution offers. Similarly, Goldman Sachs acquired digital retirement platform, Honest Dollar and has a partnership with Betterment. Both moves by Goldman Sachs expanded their ecosystem and speed to market in new capabilities.[14] With over 500 financial advisors, Independent Financial Partners (IFP) partnered with financial wellness technology company, Advizr – one of the many on a long list of highly advanced technologies IFP is curating for their Broker-Dealer launch. The partnership will provide IFP's advisors and retirement plan sponsors access to the financial wellness assessments of plan participants.

[13] JPMorgan Chase, 2016, JPMorgan Chase Partners with InvestCloud for Digital Wealth Management
[14] Forbes, 2016, Goldman Sachs to Acquire Fledgling Retirement Savings Startup Honest Dollar

HOW TO START INNOVATING NOW

To fully recognize why many market leaders are winning, requires looking past the obvious distinctions of technology – they are winning due to a commitment to the fundamentals of rapid innovation.

With uncertainty, comes risk and taking small steps and failing fast allows wealth managers to make just enough of an organizational change to determine whether the play is accretive to the business. Innovation needs to be guided and there are three principles we believe are critical to success.

1 INCREMENTAL PLAYS

By identifying minimal, but meaningful actions through the Shapes of Innovation, a wealth firm can drive effective outcomes that determine whether they should continue moving down that path.

2 FAIL FAST

The plays need to be tested quickly and in an agile manner to determine if they are viable and have traction – the market is evolving rapidly and taking months to deliver isn't a feasible approach anymore.

3 FEEDBACK, FEEDBACK, FEEDBACK

Getting the right kind of feedback in the right way, and as quickly as possible, will provide the insights that determine whether the play was successful and how to respond accordingly.

"To fully recognize why many market leaders are winning, requires looking past the obvious distinctions of technology – they are winning due to a commitment to the fundamentals of rapid innovation."

Capco's Six Shapes framework provides a tool for identifying areas to innovate that align to strategy and the targeted client segment. By following these three principles you can get started testing innovations now. These small plays can build on each other to become major impacts that can transform a business.

It is also important to recognize that innovation is not a one-time process. It needs to be fostered and become part of the cultural DNA of the wealth management organization.

Wealth managers need to adapt to win. If wealth managers don't innovate fast or effectively enough, there is no doubt that the risk of falling behind and becoming endangered is very likely.

ABOUT CAPCO

Capco is a global technology and management consultancy dedicated to the financial services industry. Our professionals combine innovative thinking with unrivalled industry knowledge to offer our clients consulting expertise, complex technology and package integration, transformation delivery, and managed services, to move their organizations forward.

Through our collaborative and efficient approach, we help our clients successfully innovate, increase revenue, manage risk and regulatory change, reduce costs, and enhance controls. We specialize primarily in banking, capital markets, wealth and asset management and insurance. We also have an energy consulting practice in the US. We serve our clients from offices in leading financial centers across the Americas, Europe, and Asia Pacific.

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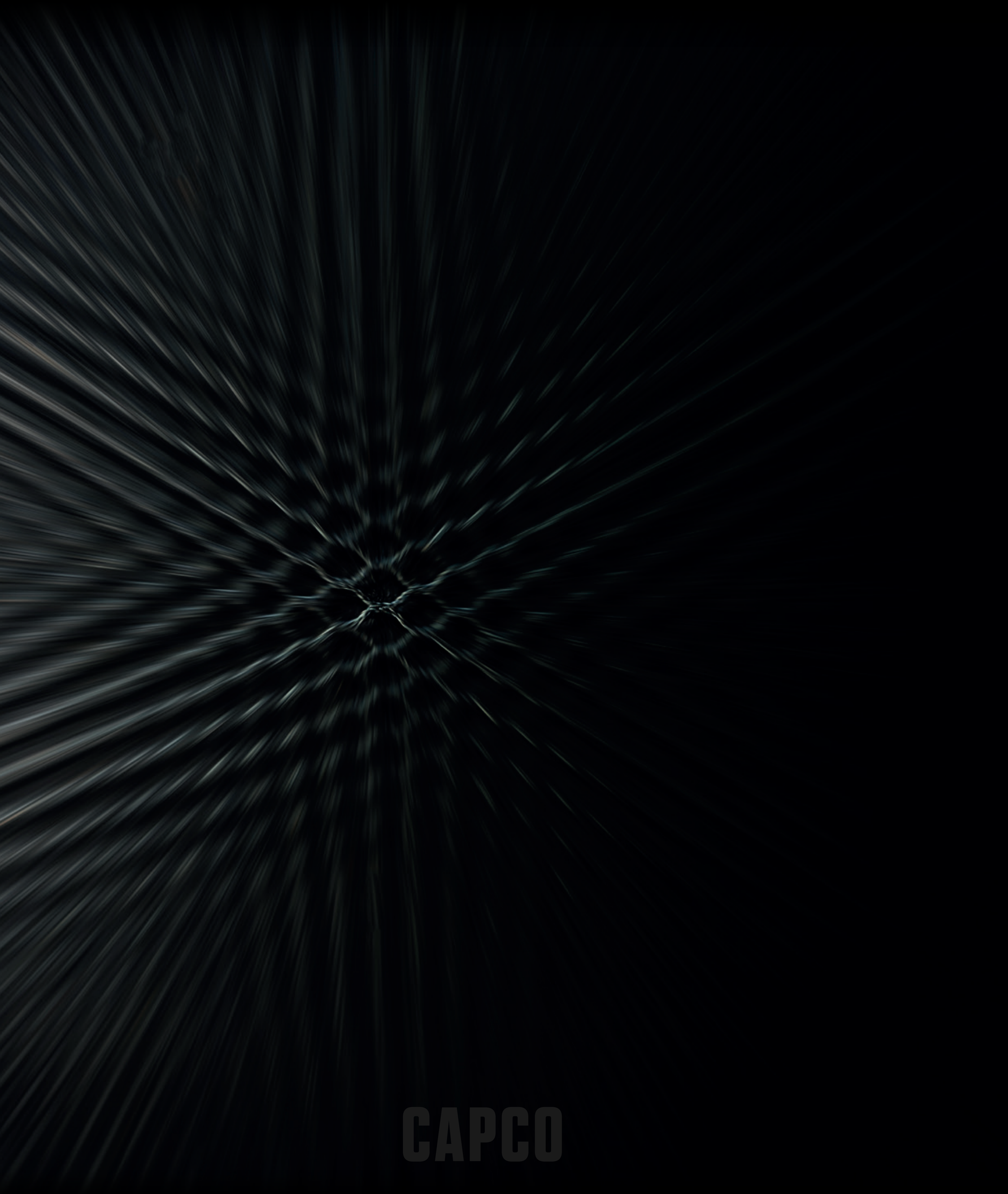

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